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A CLINICAL LECTURE
ON
STRICTURE OF THE URETHRA.

Delivered at the West Side Free Dispensary, Chicago, Ill.

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(Reported by WILLIAM WHITFORD.)

GENTLEMEN: There are two classes of cases where we are always very liable to meet with stricture of the urethra. *First*, those cases that come to us with a history of having had a continuous gleet for several months or years, preceded by one or more attacks of gonorrhœa. *Second*, those cases that apply to us for relief from an attack of retention of urine. As the case we are about to consider to day comes under the first class, we will now confine our remarks chiefly to stricture as met with in this class of cases.

It is almost a natural consequence, after repeated and long cohtinued attacks of urethral inflammation, that some contraction of the urethral passage should be the result, and organic contraction once fully established, for mechanical and other reasons, naturally tends to perpetuate the inflammation. It is wise, therefore, when consulted for this class of cases, to always investigate the condition of the urethra as regards stricture, etc.

Case.—The history of this case is as follows: Patient is 39 years of age, and since his third attack of gonorrhœa, fifteen years ago, he has had almost a continuous discharge from the meatus, which has several times assumed an acute character. He is obliged to pass his urine a little oftener during the day than is natural, and to get up from one to three times during the night for this purpose. About three months ago, he says, he was cut for stricture at some point near the meatus, but the symptoms have not been in any way relieved by the operation.

Now, in order to know whether this man has stricture or not, let us first get some approximate idea as to what his normal urethra should be. Though not universally conceded, it is a pretty generally accepted theory, that the size of the urethra should always bear a given relation to the size of the entire organ. A penis measuring four inches in circumference will almost invariably be found, if no stricture exists, and the meatus be sufficiently enlarged, to admit a No. 40 French sound, which is about 24 English. One three and one-half inches in circumference will admit a No. 35 French, which is about 22 English, A circumference of three inches would indicate a calibre of 30 French, or 18 English, etc. Though an ordinary inflammation or congestion of the urethra may naturally somewhat diminish this calibre, I think it fair to presume that, when we find at certain points a deviation of several sizes from this rule, some stricture exists. Many surgeons might claim, however, that a slight amount of contraction, as indicated in this manner, would not be sufficient to demand surgical interference, but I know no reason why, if we pretend to treat or cure stricture at all, the original calibre should not be completely restored.

Examination.—We find in this case a circumference of three and one-half inches, and would therefore expect a urethral calibre of about 35 French, or 22 English. Now, the use of an ordinary sound of uniform diameter through its entire length would be sufficient to determine the presence of stricture, but as it would be impossible to definitely locate one or more strictures in this manner, we make use of what are called "bulbous sounds," such as I now show you. Passing the largest size that will be admitted, or beginning first with one about the normal size and constantly changing to smaller size till we find one that will pass through the stricture, then as it slips through the strictured point the bulb detects the extent and location of the contraction, and so on with the deeper strictures, which, if any exist, are generally found to be smaller than those nearer the meatus. The meatus is usually the smallest part of the urethral passage, but in this case it was cut at the time he says he was operated upon for stricture, and is now nearly as large as we have indicated the urethra should be. We find, as you see, a point extending from two inches to three inches from the meatus which will only admit a No. 21 French bulb, which is about 12 English. Farther down, at five inches, we find a point which will only admit a No. 19 French bulb. Now, while we find a urethra here with a calibre abundantly sufficient for the free passage of urine, it is nevertheless diminished in its calibre nearly one-half at two different points, and while a chronic gleet may at times be met with wherein there is no stricture, it is entirely probable in this case that the discharge is, if not actually caused by this contraction, certainly aggra-

vated or prolonged by it; and as we find here a mechanical imperfection of the urethra, the rational procedure in treating the case, or endeavoring to cure this gleet, would be first to make the urethral canal a mechanically perfect one. We will, therefore, for the time being in treating this case of gleet devote our entire attention to the removal or cure of these strictures.

Treatment.—There are four principal methods for treating stricture of the urethra: *First*, gradual dilatation. *Second*, rapid dilatation or divulsion. *Third*, electrolysis, or the use of the urethral electrode. *Fourth*, cutting or urethrotomy. As there are undoubtedly cases in which for numerous reasons each of these methods may be used to advantage, I may, while the patient is being anæsthetized, briefly describe them.

Gradual Dilatation.—To enlarge a stricture by the process of gradual dilatation, conical steel sounds, similar to the ones I now show you, are generally used. The largest sound that will pass through the strictures into the bladder without particular force, or causing the patient any severe discomfort, is to be passed and the same process repeated about every third day, now and then resorting to a larger instrument, as the condition of the canal will seem to permit. In this way, very many organic strictures of the urethra may, in the course of several months, be enlarged to nearly, if not quite, the normal calibre. Some of the objections, however, to this method are its slow process, the repeated liability of its provoking reflex urethral troubles, such as the so called urethral fever, prostatitis, cystitis, etc., especially if the urethra be very irritable, and the fact that in order to maintain the calibre acquired, the occasional passage of the largest sound, which has been used, seems generally to be necessary afterwards.

Rapid Dilatation.—By rapid dilatation or divulsion, we mean the restoring of the complete size of the urethra at one operation by the use of an instrument, such as I now show you, known as a "urethral divulsor," an instrument which, as you see, when passed into the urethra, may be expanded by various devices, and made to rupture the contracted tissues. In strictures of the deep urethra the tissues, owing to their more unyielding character, may be generally ruptured by this process, and the effect or result is then very similar to what it would be if they had been cut. But in strictures anterior to the scrotum the tissues, instead of always rupturing during the process of divulsion, frequently stretch like India rubber, as it were, and immediately come back when the tension of the instrument is removed, leaving still some contraction, and the latter is one of the principal objections to treating strictures by this method.

Electrolysis.—Though there are to me some very important objections to electrolysis as a scientific method of treating stricture of the urethra, it nevertheless has its merits, and is in suitable cases, to say the least, a very useful adjunct in the treatment of stricture. As it is a fact, however, admitted I think, by even its most ardent advocates, that strictures cannot well be enlarged to more than about a No 14 or 16 English in size, by this method, it is therefore best, if not only adapted to the treatment of strictures of small calibre. In treating strictures by this method a galvanic battery, so constructed as to give the best electrolytic effect, is required. A urethral electrode, such as I now show you, which is a metallic sound insulated to within about one-half inch or so of its tip, and so arranged that it can be connected with the negative pole of the battery, and which should be several sizes larger than the stricture to be treated, is passed down and pressed against the stricture. The circuit is now completed by placing the positive electrode on some adjacent part. As to the strength of current required, no definite rule can be laid down; with the ordinary McIntosh battery, from eight to sixteen cells will be necessary. The electrode is now carefully and continuously pressed for several minutes until it finally passes through the stricture, causing, during the continuance of the operation a certain amount of stinging, burning pain. This operation is to be repeated every week or ten days, using at each time an instrument several sizes larger than at each preceding time. This, then, would complete a rather imperfect description of the method of treating strictures by electrolysis.

As to the merits of this method, it is an unquestionable fact that a larger instrument, if it contains an electrolytic current, can be passed through a very small passage than could be done without the current, as it seems to dissolve its way in, as it were. This I frequently see demonstrated in a very striking manner during the removal of superfluous hairs by electrolysis; when the needle, if the current be on, will pass into the tissues without any perceptible resistance. Owing, however, to the fact that with the use of a very *large* electrode the current becomes greatly diffused, very little electrolytic action takes place, and the effect then becomes very similar, if not the same as from the use of an ordinary sound. It is obvious, therefore, that this, as a method for restoring the complete calibre of the urethra, is an imperfect one. I occasionally use it, however, when I have a stricture so small that I cannot get any other instrument in, as it is, I think, the best method for enlarging a very fine stricture, preparatory or preliminary to the more radical method of divulsion and cutting, which I always prefer ultimately to resort to, and which I shall now describe:

Cutting Operation.—We now come to consider a method that is the most radical, the one we shall use in this case, and I think the best in all bad cases, namely, internal urethrotomy. I think the best instrument ever devised for this purpose is what is known as the "Otis divulsing urethrotome," which may, as its name would indicate, be used for both divulsion and cutting, and we will now proceed to use it in this case. As the meatus is scarcely large enough to admit a No. 22 English, which is the size we propose to pass on this man, after the strictures are removed we enlarge it slightly by putting it on a stretch with this Otis instrument, and withdrawing the blade, cutting down towards the frænum,

using the instrument therefore upside down; we now pass it down to a point so that when the blade is slightly withdrawn it comes in contact with the first stricture. We next, as you see, turn the screw at the end of the instrument and stretch the tissues up to 36 or 37 French, which is shown by the indicator on the end of the instrument. We now withdraw the blade for a distance of about one and one-half inches, and of course, the urethra being on a stretch, divide all the strictured tissues. We now turn off the tension from the instrument and slip the blade back so it is again concealed, and pass it on down to the other stricture and use the instrument in the same manner as before. We next turn off the tension, allowing the two divulsing blades to approximate each other, slip the cutting blade back where it is again concealed, and attempt to withdraw the instrument, but we find that we are unable to do so. The reason of this is that some of the mucous membrane of the urethra has become engaged between the two divulsing blades of the instrument as they approximated each other, and to remedy this we simply again separate the blades slightly by turning the screw at the end, and the instrument, as you see, is withdrawn with ease. A No. 22 English, which is about 36 French, we now find passes of its own weight into the bladder. As th hæmorrhage is insignificant nothing further is at present required. You now see that, for the time being at least, the contractions of the urethra have been entirely removed.

It now remains to look after the after-treatment properly, which is as important to the ultimate success as the operation. This will consist of passing a full-sized sound, which in this case is the sound we have just passed (22 English), about every third or fourth day, until the parts have become completely healed, which generally requires from one to two months. For the first few times the passage of this sound will cause a certain amount of pain, but it will be seen that by persisting in the constant use of it until the parts are entirely healed, the complete calibre of the urethra must be restored, and once being restored in such a manner that there is no contraction whatever remaining, there will very rarely be any subsequent contraction. In the meantime the patient should receive such internal remedies as are indicated from time to time. We will prescribe for the present the citrate of potash, in quantities sufficient to render the urine neutral or alkaline, and therefore less irritating to the urethra than if it were highly acid in character.

ORIGINAL ARTICLES.

EXPERT TESTIMONY.

Read in the Section on Medical Jurisprudence, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY JOHN GODFREY,

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"To know facts, to separate them from supposition, to arrange and connect them, to make them plain to ordinary capacities, and, above all, to point out their useful applications, should be the chief object of ambition."—WILLIAM HUNTER.

There is no intention in this paper to indulge to any degree in a legal criticism of the subject about to be presented. The question as to what constitutes an expert witness; what constitutes expert testimony, and what testimony constitutes evidence; what sorts of testimony are admissible, and what are not, and many things besides, germane to the subject, will be omitted, since they belong more strictly to the purview of the law.

The most that will be attempted will be to present a few reflections upon the moral aspect of the subject proper in its relation to members of the medical profession. For this two reasons are offered: One is that, from the structure and behavior of society, medical men are called as expert witnesses more frequently than those of other professions; perhaps as often as all of them combined; the other, that current medical literature amply shows that some features of the subject are yet in an unsettled, and, it may be added, an unsatisfactory state. And it may be added also that, much as medical men are accused of differing among themselves in regard to the particular feature of compensation, they seem to be more unanimous than are those who render decisions thereupon in courts of law.

Leaving the decisions to the courts, because, forsooth, we have to, it may be remarked that, judging from extracts and editorial comments, this one feature appears to be about all of the question that interests the medical world. Nevertheless, it does not follow that it is the most important part; and one feels safe in saying that whatever of time-serving sentiment may show on the surface, there is, among those whose high vocation is medicine, an unexpressed conviction that aiding the Commonwealth in its efforts toward the production of universal good citizenship is better work than mere worldly acquisition.

As to the competence of expert witnesses it has been decided: "That an expert must have special and peculiar knowledge or skill, is as definite a rule as that the search for a lost paper, or subscribing witness, must be diligent and thorough." As all know, the possession of the necessary qualifications is a matter to be determined by the court; yet, notwithstanding the expert witness may be subjected to a preliminary examination in order to test his competency, a recent writer on expert testimony has this to say: "An examination of the cases in which the courts have passed on the competency of experts, shows a lamentable confusion and mixing up of matter of fact with matter of law. It has been judicially commented on as leading to most unsatisfactory results, and unnecessarily obscuring the true aspect of the law on this subject by the diversity of practice which has prevailed in the judicial tribunals." The Supreme Court of Indiana says: "We find no test laid down by which we can determine with mathematical precision just how much experience a witness must have had; how expert, in short, he must be, to render him competent to testify as an expert."

Judging from these and other remarks of learned judges, at least in commenting upon the competency of medical experts, it would seem that they have applied the test with anything but "mathematical precision," since they have expressed estimates ranging from the highest to the most satirical and derogatory. Take the following as instances:

The Supreme Court of Illinois: "It was said by a distinguished judge in a case before him, if there was any kind of testimony not only of no value, but even worse than that, it was, in his judgment, that of medical experts."

The Supreme Court of Texas: "The opinions of medical men are received with great respect and consideration, and properly so."

The Supreme Court of Michigan: "The experience of courts with the testimony of experts has not been such as to impress them with the conviction that the scope of such proofs should be extended."

The Supreme Court of Pennsylvania: "It is well settled that the knowledge and experience of medical experts is of great value in questions of insanity."

The Scotch Courts: The London *Lancet* quotes Lord Fraser as saying: "The evidence was as unsatisfactory as any he had seen. It left on the mind the distressing impression that the science of medicine was simply the science of guessing and experts. Different doctors, with equal confidence and equal dogmatism, expressed contrary opinions upon the same condition of things. He advised the jury to exercise their common sense, throw overboard the medical opinions, and go by the facts."

Evidently, from the foregoing, the Justices have had to do with witness-material of the most diverse kinds, or else they reached conclusions by very different mental processes. But admitting difference in the quality of witness-material does not explain the discrepancy in the estimates of the courts, bearing in mind the quotation cited above, that "an examination of the cases in which the courts have passed on the competency of experts, shows a lamentable confusion and mixing up of matter of fact with matter of law." However this may be, at any rate it is the work of jurists, and shows that medical men are not the only ones given to "mixing up" in matters of law. But it does not follow that expert testimony is bad on account of the *ipse dixit* of a learned judge, for it has happened more than once that an estimate to that effect in a trial court has been reversed in the court above. Opposite opinions, you see, in regard to the selfsame thing. Nevertheless, whatever the cause, the history of expert testimony is such that, so far, it has not been able to gain a character altogether above disrepute. For this there are various reasons; some self-evident and in no need of mention; others by no means hard to fathom, but only apparent to close scrutiny. The following from "Taylor on Evidence" may be adduced as part explanation in one direction:

"Perhaps the testimony which least deserves credit with a jury is that of skilled witnesses. These gentlemen are usually required to speak, not to facts, but to *opinions;* and where this is the case, it is often quite surprising to see with what facility, and to what an extent, their views can be made to correspond with the wishes or the interests of the parties who call them. They do not, indeed, wilfully misrepresent what they think, but their judgments become so warped by regarding the subject in one point of view that, even when conscientiously disposed, they are incapable of expressing a candid opinion. Being zealous partisans, their belief becomes synonymous with faith as defined by the Apostle, and it too often is but the 'substance of things hoped for, the evidence of things not seen.'"

Herein are foreshadowed two difficulties; one attributable to inherent deficiencies in human nature; the other growing out of improper methods of obtaining testimony, for surely if one, "though conscientiously disposed," be incapable of "expressing a candid opinion" through zealous partisanship, unquestionably he has no business in the witness box, and the ends of justice must fail till such means be devised for obtaining testimony as exclude the exercise of this human failing.

But these are not the only difficulties that beset the subject. To begin, the breadth and depth of knowledge presupposed on the part of a medical expert is far greater than that essential to the competency of other experts. It is safe to say that not one man in ten thousand is endowed with sufficient mental capacity to master all the branches of medical science. It is safe to say that no living man can truthfully proclaim himself such a master. The man that thoroughly masters even one is justly entitled to, and is cheerfully tendered, the high regard of his professional brethren. If the range of purely medical knowledge is so wide, and so difficult to compass, what must it be when further widened by forensic medicine? Undoubtedly it would be better for the State—for the world at large—if every medical man knew all the minutiæ of medical jurisprudence, and stood ready to meet the man of law at every turn; but if, fortunately, he happens to have received some insight into its general principles during his student days, what likelihood is there, while charged with the daily care of patients, or while searching for the secrets of a science that yields at best but grudgingly, that he will trouble his brain with outside studies except in a perfunctory way? Soberly, the problems that daily confront the medical man, plus the drudgery of professional life, leave him but little time to think of, and indeed unfit him for, the intricacies of legal questions. But admitting the time and the ability, it is not unlikely that the ardor of the American mind, at least, would be dampened somewhat by the American interrogatory—will it pay? *Cui bono* is still a common inquiry, and the element of personality is rarely absent from the question. Self-advancement must be behind the action of everyday men. Only the exceptionally great follow promptings from within regardless of reward.

In Taylor's work on "Medical Jurisprudence" there are laid down for the guidance of physician or surgeon called to a case of murder or poison some twenty or twenty-five points to be nicely observed before the visit is ended. How many medical men know what those points are? How many possess

the detective instinct and training necessary to utilize them? How little likely that a physician, stopped while puzzling over the untoward aspect of his last case, and summoned to a person in the article of death, or about to be, from violence, will pester himself with these two dozen and odd observations in the interest of future legal proceedings? Very few, notwithstanding the caution of a learned judge that "a medical man, when he sees a dead body, should notice everything," and notwithstanding it has been said that "the great art of counsel who defend persons charged with murder or manslaughter, consists in endeavoring to discover *what he omitted to do*." Certainly he ought to notice everything when he sees a sick body, but how often does he, although the influences are more direct, where the fruits may be seen, and the rewards approximately calculated?

Rules bearing upon facts in medicine, like grammatical rules, are oftentimes overshadowed by exceptions. This is unfortunate, to be sure, but those who pursue a science should not be blamed for its intricacies. Medicine is not a fixed science, and perhaps will never be, though even the most intelligent laymen pretend to think so; consequently the medical opinions of the wisest and most fair-minded must *ex necessitate* be dependent in some degree upon the cast and quality of his brain tissue. In questions outside of fixed science, so long as brains differ, so must opinions, and in spite of the utmost zeal to speak truth.

In spite of profound thinking and the most industrious research; in spite of centuries of effort to probe the secrets belonging to life in health and disease; in spite of wonderful discoveries and vast advancements, the whole domain of medico-legal investigation is yet a wilderness of uncertainties. Turn whichever way one may, the exceptions outbalance the rule. In the matter of poisons, *vis viva*, constitutional resilience, idiosyncrasy, drug habit; in short, any number of peculiarities, leave the basis for evidence covering very wide limits. Sulphuric acid does not always corrode the mouth and fauces, oxalic acid does not always cause pain. Arsenic sometimes gives rise to nausea and diarrhœa, and intense agony; sometimes to collapse and sleep, as if from opium. A man dies from tasting tincture of aconite. A woman lives four hours after taking 70 minims. Immediate ante-mortem violence differs scarcely from immediate post-mortem violence. Slight wounds of the brain sometimes cause speedy death. A child shot through both hemispheres has survived twenty-nine days. And so on, to a tiresome extent, throughout every department of medical knowledge, the exceptions are spread over as wide a field as that between the ages for the beginning and the cessation of menstruation—say from 12 months to 99 years.

There is some excuse, therefore, for the medical man, and it is not entirely his fault that it has been said of him that his "appearance in the witness-box is but too often the signal for sport among gentlemen of the long robe."

Let it be understood that all along reference has only been made to those of the medical profession that go to the witness-box unbiased, neither seeking nor shirking, only desiring to see the right prevail. For the medical smartlet, saturated with self-importance; noising his opinions that cunning attorneys may utilize them; nosing opportunity for notoriety; scenting the chance to vex or vanquish a professional rival; deluded in the belief that his knowledge is above judge or counsel—for such a one it is enough to say that the worst treatment he gets is better than he deserves. The lawyer in search of testimony to fit a special case never fails to find him. The spectacle of a medical man—a man engaged in the highest of all callings—ventilating his opinions, and crowding himself into notice as a desirable witness, for either plaintiff or defendant, is a spectacle that, to the credit of the profession, is not often seen, yet nevertheless seen too often for the profession's good. No better than the smartlet is the medical man in the pay of a corporation, when he stoops to coach lay witnesses in suits for damages, putting aside his high vocation to play the rôle of partisan and accomplice. But for these it would never have been said from the bench: "The custom of indiscriminately summoning medical practitioners of all sorts, and of all degrees of pathological knowledge and forensic skill, has sadly depreciated the value of medical evidence in courts of justice."

This is by no means flattering, but clearly it is the fault of the medical profession. In suits involving medical testimony outside of absolute facts, it is customary for counsel on both sides to go on voyages of discovery in search of medical witnesses to meet special demands. And the history of the courts affords ample proof that the counsel rarely fail to find what they seek. A distinguished criminal lawyer has told the writer that it is the attorney's rule not to open a trial without knowing beforehand what the medical experts on his side will testify to. Is this as it should be? Is the threadbare argument to be offered, that lawyers are entitled to know in advance how certain opinions will affect the cause of their clients? Hardly, if justice be the first consideration. It might be said that this would sometimes cripple the proper execution of the law. That is to say, it would tend to the excluding of testimony in certain cases necessary to bring the guilty to punishment. If so, for the same reason, it would quite as often save the innocent.

But the reason, to begin, is not a good one. Counsel are no more entitled to previously question a medical man in the interest of clients than are the heads of families before calling him to a case of sickness. But, it may be asked, what if one should possess special learning, and felt that his opinion would prove of great value in a given case? No doubt plenty of doctors have the same sort of feeling in regard to given cases of sickness; no doubt some of us have felt that if we could only be called to the case that our brother has been visiting so long, we could bring it around in short order; but the ethics of the profession forbid any volunteering, and the patient gets along quite as safely with the other doctor. This rule would work just as well applied to expert testimony as to medical practice, the dignity of the profession would be enhanced, its ethics broadened, and justice be none the worse off. Adopt

it, and there would be no more previous quizzings, no legal coach, no putting of hypothetical questions with the triumphant cognizance of satisfactory forthcoming answers, no "cross and piles" swearing, no laughing-stock doctors, no casting out of medical testimony and striking of balance-sheets by juries. Moreover, the vexed question of expert fees, about which there are so many opinions and so many rulings, will have made several strides toward solution.

The medical witness that has made himself "solid" with counsel on one side of a case, may urge that his "professional opinion"—"his hard-earned knowledge"—entitles him to professional compensation; but when, being through with the cross-examination and from under the fire of the lawyers, he hears his opinion offset by that of another "solid" on the other side, and finds that his testimony is not to be accounted evidence, he may possibly have some misgivings as to what constitutes a proper *quid pro quo*.

The last sentence is not meant as a direct argument against charging professional fees for expert testimony. The question as to whether it should be done is still an open one, with decisions on both sides, and apparently of late with a leaning of the courts toward the side of the medical man's doing it. Reports of various trials throughout the country show pretty conclusively that the majority of the medical profession inclines to this side, and the reasons therefor—always the same, and unnecessary to give—seem to be self-satisfying. On the other hand there are others—equals of the best—who think differently. They claim that medicine is not a trade but a mission; that he who espouses it takes upon himself the obligation to heal the sick and preserve life, to sustain right and combat wrong, leaving the question of emolument for after consideration. They say that to stickle for a fixed consideration in dollars and cents when crime is to be punished and justice to be rendered, is opposed to the most sacred traditions of the healing art, and contradicts the exoteric pretensions of its followers; that the outward avowal of the votaries of medicine is to stand by the weak and assist the needy, if needs must, without money and without price; that the medical man so compacts with his Alma Mater; that compacts made should be kept; and that he no more than a missionary, should stop to count the cost when good is to be done. They reason that the Son of Man so taught; that it was implied in the advice to take no thought for the morrow, and in divers other teachings; that these teachings, although not at one with the utilitarian instincts of succeeding ages, have been accepted as coming from the Source of all wisdom by such numbers as count far into the millions, and that acceptance presupposes belief, and belief demands practical exemplification. In fine, that in all ages of the world the best work of every kind has been done without hope of other reward than that arising from the consciousness of benefiting humanity.

These claims may be regarded by many as far-fetched, and little better than vagaries, antagonizing the cut-and-thrust tendencies of civilized life, but whether they are, and whether they do, at all events, they are not over pretentious in professing to be deduced from valid premises. It should be added, too, that those who make these claims are imbued with no exaggerated notions of sentimentality, and have as few communistic leanings as the most hard-fisted individualizer in the profession. Nor, no more than the rest of us, do they believe the millenium to have come, understanding full well that man must live by the sweat of his brow, and that a return for services rendered is one of the essentials to the well-doing of the race. In short, they say strip the subject of all declamation, and let those that write *Doctor Medicinæ* after their names, declare whether they are engaged in a trade or a mission, whether the business of life means bargaining, or trusting to such emolument as enlightened communities are willing to give for work well done.

The solution of the question of extra fees for expert testimony will not be attempted, seeing that in any event it must hinge upon opinion—the opinion of the courts, and the prospects of unanimity among them is still a long ways ahead. Instead, and in conclusion, two propositions are submitted with a reasonable confidence in their fairness.

1. In medico-legal cases, if men who practice medicine and surgery are willing to sacrifice professional dignity and cheapen professional knowledge by committing themselves beforehand as to what they would testify if called upon, then they ought to be content with such pay as the law chooses to allow, for, indeed, they are very nearly on a level with the "irregular" who, after hearing the symptoms described, obligates himself to cure the malady for so much in advance.

2. If a medical man, on account of his professional attainments and the stamp of manhood that he bears about him, is summoned to testify uncommitted in any sense, then he is entitled to such honorarium as his time and talents usually bring him, and it safe to say that such a man will ask no more than he rightly deserves.

THE CAUSATIVE RELATION OF AMETROPIA TO OCULAR DISEASES.

Read in the Section on Ophthalmology, Otology and Laryngology, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY JOHN E. HARPER, A.M., M.D.,

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In calling attention to this subject the writer does not desire to create the impression that he has anything purely original to offer. The relation of refractive errors to diseases of the eye and its appendages has been considered in communications from some of our best authors. If, then, he only succeeds in adding corroborative evidence to what has already been written, and in drawing forth an expression of opinion from those in attendance, he will have accomplished his aim.

Every one engaged in treating ocular diseases frequently observes that an overstrained eye shows evidence of irritation and congestion of the anterior part of the globe or lids. By an overstrained eye is

meant one whose accommodation has been taxed to an unusual extent. When we consider the direct relation between the nerve supply of the ciliary muscle and that of the eye and lids, it is very easy to account for the results just mentioned by what is termed reflex irritation. If the straining of accommodation for a reasonably short time will produce marked congestion of the ocular and palpebral conjunctiva, we can readily understand how important a rôle this would play as a factor of disease when conditions are present necessitating almost constant effort.

Time will not be consumed in repeating clinical facts in this connection that have already become classical. Your special attention will be directed to the influence of accommodative strain in maintaining some of the common forms of chronic disease. While the following remarks are also applicable to diseases of the lids and iris, more stress will be laid upon conjunctival and corneal affections. Among the recognized causes of simple acute conjunctivitis we find ametropia mentioned, and while this may be noted and considered in the treatment by most practitioners, the writer's experience leads him to believe that not sufficient importance is attached to it. Undoubtedly there are many cases due to this or other causes that pass into the chronic stage before being controlled and the over-sensitive ciliary muscles continue to act, even when not required; keeping up sufficient irritation to counteract all ordinary treatment.

As illustrating this point three cases will be cited from the writer's practice:

Case 1.—H. M. P., æt. 36, of Newton, Ill., presented himself in October, 1882, and gave the following history: For nearly twenty years he had been a sufferer from granular conjunctivitis associated with pannus. During these years he had been treated by many physicians and used nearly every patent nostrum that came to his notice. The result of the variety of treatment was in most instances temporary improvement, but whenever he attempted to use his eyes the old trouble returned. To use his own expression, "during all these years I have not been able to attend to my business properly for one month at a time on account of my eyes."

Examination showed the usual appearances of the conjunctiva and cornea found in such cases. Vision was $\frac{20}{100}$ in right eye and $\frac{20}{200}$ in the left. Photophobia was marked and the tears flowed freely when the eyes were exposed to light.

Treatment consisted in the use of a solution of atropine (gr. iv–℥j) every three hours during the day, and the free bathing of the closed lids with hot water. After two weeks' use of the atropine his corneæ cleared up sufficiently to allow the correction of his compound hyperopic astigmatism. Vision at this time, with the correcting glasses, was R. E. $= \frac{20}{40}$; L. E. $= \frac{20}{70}$.

The patient being called home on urgent business, passed for a time from observation. On leaving he was advised to wear his glasses continually, use atropine if the eyes became irritable, and apply once daily to the conjunctival surface an ointment containing hyd. ox. flav. gr. iv, vaseline ℥j. Letters received from time to time indicated satisfactory progress, and within six weeks after returning home he was able to keep his books and look after a fair-sized lumber business.

About eighteen months from the time of his first visit he again presented himself. He stated that he had not lost a day from his business on account of his eyes for fifteen months. A test showed his vision to be $\frac{20}{30}$ in R. E. and $\frac{20}{40}$ in L. E. The patient was seen last about two months ago, and he informed the writer that he had had no relapse, his vision in each eye was $\frac{20}{30}$, and no difficulty was experienced in reading or doing work requiring vision at close range.

Case 2.—S. M. G., æt. 32, of this city, made his first visit in June, 1883. He had been under treatment most of the time for nearly eight years for granular conjunctivitis with slight pannus. The gentlemen who had treated him were men of acknowledged ability, and the graphic description he gave of the methods employed showed that they had skilfully used all of the standard remedies applicable in such cases. In fact, nothing seemed to be left for the writer to try, as the list embraced everything from the silver stick to jequirity. Upon careful examination the eyes were discovered to be very sensitive to light and exercise, tearing freely when exposed or used. Vision in R. E. $\frac{20}{40}$, in L. E. $\frac{20}{50}$. Atropine was used as in the previous case, and gave much relief from the lachryn ation. A test a week later showed the presence of mixed astigmatism which, when corrected, gave vision $\frac{20}{30}$ in each eye.

The subsequent history of this case corresponds in the main with that of the first. The treatment was very similar, except that mild astringents were employed and continued for a longer period.

Case 3.—J. H. C., æt. 22, was first seen September, 1885. He was led into the writer's office by a friend, being unable to see his way alone. The history elicited was as follows: Seventeen months before he had contracted what he supposed to be a cold. His eyes became inflamed and he immediately placed himself under the professional care of his family physician. Three months subsequently he found his eyes were not improving and decided to consult a specialist of repute. Twelve months' treatment under the skilful hands of this gentleman failed to improve his condition; on the contrary, he grew steadily worse. Becoming discouraged again, he decided to seek advice elsewhere.

Examination revealed a case of granular conjunctivitis, with marked pannus covering corneæ. As in the second case, nothing was apparently left to be done in the way of orthodox treatment. The eyes, as in the other cases, were very sensitive to light, and although the corneæ were so opaque that vision could not be tested, the symptoms showed clearly the presence of ciliary spasm. It was decided to use atropine, and the patient's accommodation was brought thoroughly under its influence and kept so for about six weeks. Mild astringent collyria were used during the same period, at the end of which vision had so far returned that it was easy to demonstrate the presence of hyperopic astigmatism. Atro-

pine was discontinued for two or three weeks and an ointment of hyd. ox. flav. substituted. The corneæ continued to clear up, and atropine was again used to determine the amount of astigmatism. The test was not satisfactory, and the correction was postponed until the pannus had further improved.

About three months after the patient was first seen the astigmatism was fully corrected, and vision was in the R. E. $\frac{20}{30}$, and L. E. $\frac{20}{40}$. The conjunctiva being free from inflammation, the patient was allowed to return home and resume work. When last heard from vision was about normal and no difficulty was experienced in reading.

The cases here reported are typical of a large number that have come under the writer's observation, and it is unnecessary to consume time in giving the history of other cases.

Many forms of corneal disease, both acute and chronic, as well as numerous lid affections, have been found to disappear as if by magic when existing ametropia was corrected.

A CASE IN WHICH ABORTION WAS INDUCED FOR UNCONTROLLABLE VOMITING OF PREGNANCY.

Read before the Boston Gynecological Society, October 13, 1887.

BY AUGUSTUS P. CLARKE, A.M., M.D.,
OF CAMBRIDGE, MASS.

I was called on April 30, 1887, to attend Mrs. B., aged 32 years, who was suffering from vomiting of pregnancy. Patient menstruated January last, and says she also menstruated March 1, lasting two days. Since that time she had had no indication of a return of the menses. Until April 30, she had experienced during this pregnancy no unpleasant symptoms. The stomach was in fair condition and she was able to take her usual meals.

The patient had been married 13 years. First child, male, was born two years after marriage; that pregnancy was not attended with any serious symptoms, in fact she was advanced in pregnancy several weeks before she was aware of her condition. Her second child, a male, is now 9 years old. The patient suffered continually during the early weeks of that pregnancy but after the fourteenth week all vomiting and morning sickness ceased. The pregnancy continued to full term, and the child was strong and well-developed. Her third child is now 7 years old; while pregnant with the third child she experienced at first more or less trouble from nausea from the tenth to the fifteenth week but the nausea was controlled to a considerable extent by small doses of ingluvin and bismuth subnitrate. Patient went on without further trouble to the end of pregnancy, the labor was normal and she gave birth to a healthy female child. Within a year after the birth of this child she became pregnant but miscarried before the close of the third month. She had no morning sickness nor vomiting of pregnancy.

The next pregnancy began March 9, 1881, and terminated December 14, 1881. The patient was a great sufferer from obstinate vomiting from May 21 to June 20, that is, from the eleventh to the fifteenth week. After that date the severe vomiting and nausea were under control. During the sickness of that pregnancy ingluvin could not be borne. Iced champagne and siphon soda were freely used and these articles appeared to be of occasional benefit. The application of a small blister over the fourth and fifth dorsal vertebræ was always followed by a marked improvement in the patient's condition. She gave birth to male twins at full term. The patient again became pregnant and miscarried during the third month, which occurred in May, 1883, but she cannot now recall that the pregnancy at that time was attended with either vomiting or nausea.

At the time I was called, April 30, 1887, the patient had not experienced any special trouble until that time. Other rational and physical signs indicated pregnancy and the patient was confined to her bed and was unable to partake of even the simplest kind of nourishment without nausea or vomiting being excited. Siphon soda, iced champagne bismuth subnitrate, oxalate of cerium, acetate of morphia in small and repeated doses were prescribed from time to time with only limited benefit. Counter-irritants to the epigastrium were applied, also small blisters of cantharides to the parts were afterwards applied, these only gave partial relief. Subsequently frequent and repeated applications of tincture of iodine to the os and cervix uteri were made. These gave the patient a good deal of relief. The applications of the iodine were made at intervals of two or three days and sometimes at longer intervals. The patient, when I was first called during her last pregnancy, had a very sallow complexion and she vomited not only what food she took into her stomach but she vomited also vast amounts of frothy and catarrhal substances, and also yellow bile. The urine was heavily loaded with amorphous and granular urates and spiculated spherules of urate of soda. There was no albumen nor urinary casts. Hot-water douches were daily employed and occasionally a third of a grain of morphia in suppository was used at night. Gentle laxatives were occasionally used and at length the complexion and general appearance improved.

Though the patient was unable to retain nourishment for any considerable period, she appeared to hold her ground until May 27, when she was seized with a severe attack of sick headache, a malady from which she had suffered at intervals since childhood. This attack was a great shock to her nervous system. The patient was chilly and vomited and suffered from extreme nausea. The extremities were deathly cold and the system only partially responded to stimulating applications and to artificial heat to the surface of the body. An application of menthol to the head and to the epigastric region, and morphia internally, which had afforded so much relief before now failed her. The usual solution of cocaine could not be borne by the stomach or afforded no relief. The applications to the cervix uteri of course had to be discontinued and chloral hydrate, which has been often recommended, was given in enemata but was not retained, and failed when retained to produce sleep, and the patient was more exhausted from its

use. The pulse was small and the heart was weak, the eyes sunken, and the patient's condition was now evidently extremely critical. R. & C.'s powdered beef peptonoids, and Wells, Richardson & Co.'s lactated food, which have proved so useful in other cases, also failed her, and could not be retained by the stomach nor by the rectum.

Dr. W. W. Wellington saw the patient with me, in consultation, 12 M., June 3. She at that time was utterly prostrated, she could retain absolutely nothing in the stomach. She had vomited the night before sixteen times, frothy substance and whatever she had attempted to swallow. She was also unable to retain enemata of beef peptonoids, or of other nourishment. Dr. Wellington reviewed the plan of treatment, and remarked that the ground was pretty well covered. He regarded her pulse as very feeble, but suggested we should make another effort to give the nourishment in a teaspoonful quantity, regularly as could be done, every twenty minutes, and if that plan failed, and the stomach refused to retain it, to try again the method by injection. Dr. Wellington suggested that digital dilatation of the cervix uteri should be tried, though I had previously attempted to dilate the os and cervix before commencing the applications of the tincture of iodine. Dr. Wellington examined the cervix and made a further attempt at that visit to dilate according to the method of Copeman, but before he had accomplished much he found it necessary to desist, as the patient grew faint. He advised that I should make another trial that evening to dilate the os and cervix. I did so, but the attempt was only partially successful.

The next morning it was very evident that unless the uterus could be speedily emptied the patient would not survive much longer.

The question of inducing abortion we had considered at our consultation, and we also considered that digital dilatation would be a step in aid of that accomplishment. But there was another question to be considered, namely, the danger of hæmorrhage, as well as that of shock, and the possible occurrence of septic influences. The question of medical ethics was easily eliminated as the prognosis was neither distant nor uncertain unless the last means at our disposal were promptly resorted to. At 8 A.M., June 4, I placed the patient in Sims' position, and having thoroughly carbolized a No. 14, French scale, bougie, olive-tip, I inserted it into the cervix in a spiral direction across the fundus between the uterine wall and the membrane so as not to do violence to the latter. The bougie was left there for eight hours, and was retained in its position by carbolized cotton tampons. The vagina was washed with a solution of carbolic acid (1 to 40) before the insertion of the bougie.

On the afternoon of that day the patient had a slight show of blood from the vagina, and at 6 P.M. I removed the tampons and bougie, thoroughly disinfected the parts, dilated the cervix somewhat with the uterine dilator and then introduced a small curette to see if all was clear. On removing the bougie I found that it was somewhat eroded. I next introduced a No. 14 platinum probe, olive-pointed; this was passed in the same direction as the other one was bent, and retained in position by the same means as was the bougie. This was retained until 7 A.M., following, when it was removed, together with the tampon, as I had directed the nurse to do if pains or flowing came on, or any considerable inconvenience was experienced by its presence.

At my visit at 8.30 A.M., the next day I again disinfected the vagina, dilated the cervix, and introduced the curette to see if there was any obstacle to the free exit of the fœtus when it should descend. There had been no flowing of consequence, and the only indication that the patient would soon abort was the occurrence of an intermittent pain. Another carbolized tampon was applied as a precautionary measure against subsequent hæmorrhage.

Soon after my visit the pains increased, and by 11 A.M., that day, a fœtus four inches in length was expelled. The funis was small or thread-like. There was no marked flowing after the expulsion of the fœtus, indeed there was no hæmorrhage of importance at any time. A large fatty placenta was expelled twenty-four hours after the expulsion of the fœtus, and forty-seven hours after the bougie was inserted into the uterine cavity—for the first time. At no time after the insertion of a bougie was there any increase of temperature, and no chills, and no constitutional disturbance; in fact the patient began to improve as soon as the fœtus was expelled, and was able almost at once to retain by the rectum repeated doses of beef peptonoids and other nourishment.

The stomach gradually grew stronger and by June 12, the patient began to take some nourishment by the mouth, and at no time after means for inducing abortion were adopted was there the slightest increase of temperature or the occurrence of any constitutional symptoms.

June 14, 10 A.M., temperature still slightly subnormal. Stomach has retained some thin gruel. Patient still looks sallow but is improving. Pulse 90. There is no odor from the vaginal discharge. Urine has improved, there is less sediment. Patient took an enema and had a small evacuation of the bowels. Patient feels encouraged and now thinks she will recover.

After this the patient continued to improve and went on to an uninterrupted recovery.

The question is often asked, what is the cause of uncontrollable vomiting of pregnancy? Does it depend upon uterine displacement, local lesion, or an undue constriction of the cervix? Many cases appear to be reflex, and treatment directed towards the lessening of reflex action often yield favorable results. Vomiting of pregnancy resulting from local lesion, as well as displacement, often occurs, and the vomiting is only controlled when we direct our treatment to the removal of these etiological factors. Cases occasionally occur like the one here reported, in which no etiological factors can be discovered, however diligent our search be extended. In the majority of cases of vomiting of pregnancy my own observations lead me to assign as the cause of such sickness the same factors as has Professor Graily Hewitt, of London, to uterine sickness in the non-pregnant state. Professor

Hewitt says that the reflex symptoms of uterine sickness are dependent upon abnormal conditions of the uterus, "consisting of undue softening, congestion and alteration of shape—all more or less associated."

My experience further leads me to the belief that these several abnormal conditions of the uterus are often varied and that such existence, either separately or even in conjunction, may be so slight as not to be recognized by their local manifestations; and that treatment directed to the relief of one of the abnormal conditions may militate against the lessening of reflex irritation emanating from the others. Mechanical treatment of the displaced uterus when properly carried out often yields, as said before, happy results, but cases now and then occur in which the displacement or flexion is easily removed though the nausea and vomiting still persist to an alarming extent. I have notes of a case that came under my care, and though the flexion was controlled, vomiting continued until the close of the pregnancy.

MEDICAL PROGRESS.

CURE OF EPITHELIOMA OF THE LARYNX.—PROFESSOR SCHNITZLER has recently published, in the *Internationale klinische Rundschau*, of November 20, 1887, a paper on the diagnosis and treatment of endolaryngeal new growths; in his paper he records the case of a woman in whom he had destroyed an epithelioma of the larynx by the galvano-caustic method twenty years ago, and who was still living. The diagnosis of epithelioma had at the time been fully confirmed microscopically by very competent and trustworthy pathologists. He was nevertheless afraid that, on hearing the case, some might be disposed to make the usual comment referred to in the following remark of Ducarcques: "Cancer is incurable because it is not cured ordinarily; it cannot be cured because it is incurable; and when it is cured, then it did not exist." The following are the details of the case: E. L., an actress of Prague, 20 years of age, was in January, 1867, admitted into the clinic of the late Professor Türck, of Vienna, for persistent hoarseness. Türck stated that vegetations of the vocal cords were the cause of the voice affection. Repeated operations performed by him with the knife (in February and June, 1867) were only temporarily successful. When the patient came, some months later, into the clinic of the late Professor Oppolzer, she was almost absolutely aphonic, and also complained of considerable difficulty of breathing. Schnitzler, who was then assistant to Oppolzer found that the local cords were much swollen, and detected the presence of red vegetations of a granular appearance at their inner side. The vegetations almost filled up the rima glottidis. In spite of the youth of the patient, Schnitzler diagnosed epithelioma, and immediately removed the vegetations, which already threatened to suffocate the patient. The first piece of a large size (of about the size of a cherry stone) which was removed by the galvano-caustic loop, was microscopically examined by Drs. Biesiadecki and Scheuthauer, then assistants of Professor Rokitansky. Both these experts pronounced the growth to be epithelioma. Schnitzler afterwards heard that Professor Türck had also at once made the diagnosis of epithelioma, and that his diagnosis had been confirmed by the microscopical examination of Professor Wedl. Schnitzler had repeatedly destroyed the disease by galvano-cautery, and was happy to be able to show the patient at the meeting of the Imperial Royal Society of Physicians of Vienna on October 16, 1868, as being cured, that is to say, so far as we were entitled to speak of the cure of epithelioma. The patient was still hoarse, but her voice could already be distinctly heard, and the dyspnœa had completely disappeared. No trace of the growth could be discovered (Report of the Society of Physicians of October, 1868). The patient remained under the observation of Schnitzler for some years longer, and he thought it possible that she might have lived for ten years after the operation. Before, however, he published the case, he wished to obtain exact particulars as to the patient's fate, and, therefore, applied to the physician who had in the first instance sent the patient to him. To his surprise he learned that she was still alive, and that the physician had seen her only recently at Prague, twenty years after the laryngeal epithelioma had been destroyed. Schnitzler went on to ask if it was possible that such excellent microscopists as Biesiadecki and Scheuthauer could have made a mistake. He could not believe this, as their diagnosis was quite positive. After all, why should not recovery take place after the galvano-caustic destruction of an epithelioma, as well as after its extirpation with the knife? The possibility of curing some kinds of carcinoma was, as is well known, admitted by Rokitansky.

PSEUDOTRICHINOSIS (A NEW DISEASE).—By this term is meant a particular form of acute parenchymatous polymyositis, all the muscles of the body being involved in a general inflammation, in the absence of the trichina spiralis. Examples of this affection belong to the curiosities of medicine, according to DR. PAUL HEPP, of Giessen, who reports a fatal case of the same in the *Berliner klin. Wochenschrift*, No. 17, 1887, and who has been able to find very few accounts of any similar cases. The above title has been selected as a provisional one till the true cause of the disease can be made out. The following is a brief history of Dr. Hepp's case: A woman, aged 36, of healthy family, married, and having had three children, began to feel ill in March, 1886. Then a rash appeared upon the face, consisting of numerous red, non-elevated, and non-irritating spots. There was dryness of the throat and some difficulty of swallowing. The rash extended over the neck and back, also to the mucous membrane of the mouth. Severe pains set in over the nape of the neck and the shoulder-blades, and the legs, but not the thighs, became swollen. During the week the pains extended to the sacrum and extremities, and a week later the face and right arm swelled, then the

left arm. The swelling of the face, though it prevented the patient from seeing for the time, only lasted one day. The swelling of the arms was very gradual, and persisted all through remaining life. The back-pains reached their climax with the swelling of the limbs, which were also very painful. The pains were not spontaneous, but set in on the least movement. Stiffness was soon superadded, so that the patient had to be fed. The pains were of a dull kind; there was slight drawing of the fingers, but no true formication. The appetite remained good all the time, there was much thirst, the urine deposited a copious sediment, and the bowels were rather constipated. Profuse sweats and sleeplessness were also complained of; never headache. The muscles were found to be swollen and in a semi-rigid condition, not altered by purposive movements. The joints appeared normal and were quite free from pain.

The œdema was peculiarly hard, and barely retained the impression of the fingers. Gentle passive movements could be made without giving pain, but of slight extent only, owing to the contracted condition of the muscles. Each arm seemed like a firm cylindrical tumor, so that it was hard to say how far the muscles participated. The head could not be raised from the pillow; only a slight rotation was possible. Pupils of moderate width, and react well. Voice weak, but normal. Sensorium unaffected. Sensibility to various impressions normal. Tendon-reflexes perfectly lost in arms and legs, also abdominal reflex. Reflex of sole of foot alone preserved. On electrical examination the upper and fore-arms and the thighs and legs reacted neither to the faradaic nor the galvanic current; the œdema of the legs was not enough to account for this. Strong faradaism caused contractions in the muscles of the hands (interosseous and thenar). The facial muscles reacted well to both currents. The internal organs revealed nothing abnormal (the spleen was not enlarged), but their examination was very difficult, as it gave pain. T. 101.2°; P. 122, small and soft; R. 18, regular. Diaphragm acted well. Urine scanty, rather dark, specific gravity 1,036; copious urates, some albumen; under microscope, some few cells, but no cylinders.

Within a week or two after admission the patient died in a suffocative attack, preceded for some days by gradually increased difficulty of swallowing. The temperature rose to 104° a few days before death; there were severe headaches and much burning feeling in the skin generally.

Autopsy by Professor Recklinghausen.—A general firm œdema, except on face. Fatty tissue deficient, especially over abdomen. Subcutaneous tissue moist. All the muscles showed a yellowish *pallor*, with only here and there a few red spots, and resembled rabbit-muscle; they were very moist. Left rectus abdom. ruptured in upper part. Over the lower part of the right biceps brach. very bloody œdematous tissue. Hæmorrhagic infiltrations over shin. Diaphragm normal. Heart muscle strongly contracted, of good color, and held a firm clot. The right subclavian vein and the axillary veins held a little fluid blood. Fluid blood in vena cava. Slight redness of brachial nerves. Lungs large, much congested, a few projecting spots dry and hepatized. Left lung very œdematous. The right pleural cavity held nearly five ounces of yellowish fluid with flakes of fibrin, the left a little turbid fluid. Peyer's patches not to be seen, solitary follicles hardly visible. Liver large, weight 4.3 pounds. Spleen large, pretty firm, weight 9½ oz. Left kidney very large, otherwise normal; full of blood. Right kidney converted into a hydronephrotic sac holding a turbid urinous fluid, but no pus. The communication with the ureter was very small, but admitted a fine probe. Central organs of nervous system presented nothing abnormal, except for an increase of blood; the meninges were very vascular. Gray substance of spinal cord slightly reddened. White substance of pons reddened. Microscopical examination showed the absence of trichina spiralis. The muscles had undergone hyaline degeneration; no fatty degeneration present. There was no increase of intercellular tissue. The viscera (except the right kidney) and central nervous organs showed nothing abnormal.—*London Medical Record*, August 15, 1887.

GANGRENE OF THE ŒSOPHAGUS.—DR. WM. WATT KERR, of San Francisco, reports the following interesting case:

During the month of May, 1887, J. K., a laborer, was admitted to D ward of the City and County Hospital, complaining of weakness, shortness of breath, and difficulty in swallowing. The history of the case showed that the patient had been addicted to the excessive use of alcohol for many years. His breathing had distressed him for about two years, but to this he had paid little attention until a short time before his admission into the hospital, when the difficulty in swallowing began to trouble him. On examination the patient was seen to be thin and poorly nourished; cyanosis was present, but not in any marked degree. In the epigastrium well marked and diffuse pulsation was visible, but palpation and percussion failed to define any tumor. The whole area of cardiac dulness was increased, and a regurgitant murmur was distinctly audible both in the aortic and mitral areas. The epigastric pulsation, together with the difficulty in swallowing, suggested the possibility of aneurism of the descending aorta; but this was rendered very doubtful by the inability to define a tumor, and also by the fact that the sensations of the patient placed the seat of œsophageal obstruction at a higher level than that which would correspond to the pulsating area. A small œsophageal probang was introduced, by means of which the obstruction was detected and overcome with comparative ease.

The diagnosis arrived at was aortic and mitral incompetence, with cardiac dilatation. The obstruction of the œsophagus was regarded as something quite distinct from the heart disease, and believed to be due to simple stricture from some injury to the tissues, probably by means of some corrosive poison, as it is not an uncommon thing for chronic inebriates to substitute mineral acids for alcoholic liquors when the state of their finances renders it impossible to

obtain the latter. The treatment consisted in absolute rest in bed, the careful administration of digitalis, nourishing chiefly by means of liquid food, and the passage of a probang twice in the week for the purpose of dilating the stricture. Under these conditions the patient made some slight improvement, the attacks of dyspnœa were less frequent than formerly, although they occurred two or three times per week, and occasionally were so severe as to present all the appearance of impending death; but the œsophageal obstruction remained unchanged, in fact, the passage of the bougie did not produce even the most temporary improvement, and therefore its cause remained a matter of doubt. After he had been an inmate of the hospital for about three weeks the patient died.

An autopsy was made by the interne physician, Dr. B. A. Plant, who found all the chambers of the heart very much dilated and their walls thinned; the aortic and mitral valves were incompetent, but there were no signs of aneurism. The œsophagus was entirely free from stricture in its walls, but that portion lying between the pericardium and the vertebræ was softened and gangrenous. The changes in other organs did not present anything of special interest bearing upon the case, there being only those which are most frequently met with as a result of chronic alcoholism.

Was the gangrene caused by pressure on the œsophagus? In the absence of any other cause, and in consideration that the gangrene was limited to that part of the œsophagus underlying the heart, while the cervical portion was healthy, we are inclined to answer in the affirmative; nevertheless, the fact that the pressure must have been very much relieved with every contraction of the heart, and the frequency with which we have met cases of extensive cardiac dilatation, without ever seeing one in which deglutition was rendered difficult, would make us fain discover some other cause than that which was the only one here apparent.—*Sacramento Medical Times*, January, 1888.

CEREBRAL ABSCESS; TREPHINING; RECOVERY.—BARR reports the case of a boy, aged 9 years, who had had an offensive discharge from the right ear for a year, Three weeks before admission into the hospital he was seized with severe pain in the affected ear and side of the head, with a hot and dry skin, and vomiting and drowsiness. These symptoms continued for four days; the vomiting then ceased, but the pain and drowsiness remained. Eight days from the commencement of the symptoms he had a severe rigor, which lasted fifteen minutes. He had six rigors before admission to the hospital, and the pain and drowsiness persisted. There was a perforation in the upper part of the tympanic membrane, from which pus escaped. Firm pressure over the mastoid produced pain. Barr opened the mastoid cells by chiseling through the cortex behind the auditory canal, and injected a weak solution of carbolic acid through the antrum and tympanic cavity out by the external meatus, and also in the reverse direction. A small quantity of pus and caseous *débris* was washed out. A drainage-tube was introduced into the orifice in the bone, and iodoform used as a dressing. Twice a day afterward an antiseptic solution was forced through the opening and drum in both directions. Two days later he had a rigor, and the symptoms returned. Five days later there was a sudden and copious discharge of pus from the ear. All the symptoms subsequently became worse, and ptosis of the right upper lid appeared, and it was decided to trephine the skull. The middle ear was washed out with an antiseptic solution, and the scalp and neighboring parts carefully cleansed with turpentine and methylated spirit. A half-inch disc of bone was removed from the squamous portion of the temporal, at a point an inch and a half above and half an inch behind the centre of the external auditory meatus. When the dura was opened and turned aside, the brain tissue immediately bulged into the osseous cavity, and rose above its external level. A hollow needle was inserted into the brain, and, after it had penetrated about three quarters of an inch, there was a sudden escape of foul gas, accompanied by a bubbling sound and the escape of some fluid. The needle was inserted a little farther, when pus of an offensive odor flowed out. The aperture in the brain tissue was enlarged with a forceps, and portions of necrosed brain tissue were removed. The cavity was then washed out with a saturated solution of boracic acid. Pus continued to ooze from the wound, and an aperture was then drilled into the base of the skull, just above the osseous boundary of the external auditory meatus, involving the squamo-petrosal suture. The dura mater was here intact. It was opened and the abscess reached. A stream of boric-acid solution was passed through this aperture so as to wash out the cavity of the abscess, and it made its exit freely by the upper opening. The current was then reversed. Chicken-bone drainage tubes were introduced into both apertures, and the parts were thickly covered with boric-acid powder and dressed with sublimated wood-wool pads. The wounds were dressed about once a week. The softened brain tissue at the seat of the upper opening in the skull soon presented a mass of granulations, which increased in size and rose into the aperture in the bone, uniting with the layer which formed on the exterior of the skull. The two soon became blended, and cicatrization rapidly progressed. The child increased in flesh rapidly, and was at the end of six weeks quite well. Three months after his admission all secretion had stopped in the ear, leaving a dry perforation behind. A vulcanite shield was fitted over the upper aperture in the skull, the lower one having completely closed.—*Archives of Otology*, Vol. 16, No. 2.

SUBCUTANEOUS INJECTIONS OF ANTIPYRIN.—Germain Sée recommended, some time ago, the hypodermatic use of antipyrin in painful affections, in place of morphia; Fränkel records his experience in the *Deutsche medicinische Wochenschrift*, No. 41; and HIRSCH gives a number of cases in the *Berliner klinische Wochenschrift*, No. 46, 1887. He used a 50 per cent. solution in distilled water, a Pravaz

syringeful being injected into the subcutaneous connective tissue. The syringe should be immediately cleansed by passing carbolized water through it several times, or it will become obstructed by antipyrin crystals. The pain caused by the injections is very slight, and lasts but a few seconds; and as a rule, there is no inflammation at the site of injection.

Hirsch records seven cases in which antipyrin was used hypodermatically: 1. Woman, æt. 45; severe rheumatism of ankle and shoulder; half a syringeful of the solution injected over each joint. In three minutes both joints were entirely free from pain, which did not return. 2. Woman, æt. 22. Severe pains in ankle for twelve days, for which examination revealed no cause. Syringeful injected near external malleolus; in three minutes the pain was gone, and did not return. 3. Man, æt. 51, with severe rheumatic pains in the muscles of the head, back, neck and limbs, and with momentary pains in the lumbar region and along the course of the sciatic nerve. Patient could not get out of bed, or even raise his legs. A syringeful was injected, in the lumbar region of each side and in the back of each thigh. In ten minutes the patient could raise himself without pain. On the next day there were pains only in the calves of the legs, and half a syringeful was injected into each; the patient got up next day. 4. Woman, æt. 43, with severe pains in right breast, right pectoral muscle painful, and movements of right arm painful. Syringeful injected over right pectoral muscle; in five minutes the pain had disappeared, and the arm could be moved freely; the pain did not return. 5. Severe neuralgia in the temporal region, in a woman, was relieved by one injection in three minutes; subsequent history of this case not known. 6. One injection relieved severe gastralgia in two minutes; the pain returned to a slight extent two hours after the injection. 7. Bronchial asthma in a woman; had lasted for a week, at intervals. Half a syringeful injected on each side of the sternum during an attack; in two minutes the breathing was easy. She had no more attacks, at least for three days, when she was last seen.

Dr. Captain, whose valuable paper in the *Bulletin Médical* is partly a *résumé* of the previous observations of various physicians, including a good deal of matter contained in a graduation thesis by Dr. Caravias, states that the solution of antipyrin in its own weight of water, though it may be used hypodermically, is painful, and he therefore adds fifteen parts of cocaine for every 1000 parts of antipyrin. With this solution the injection is much less painful than when no cocaine is added. The place where the needle has penetrated usually becomes slightly raised and tender, and once or twice small abscesses have formed. The usual dose employed by him is thirty minims. In dysmenorrhœa, and uterine pain generally, an enema (which is to be retained by the patient) of warm water containing 75 grains of antipyrin gives the best results. The action of this drug in relieving pain of very diverse kinds of origin —*e.g.*, neuralgic, rheumatic, herpetic, etc.,—whether given by the mouth, by the bowel, or hypodermically, is very strongly praised by Dr. Captain, who suggests that every medical man can easily verify its remarkable anodyne power by a few simple trials. The doses he recommends are somewhat higher than those frequently given; thus he puts the dose for internal use at from 30 to 90 grains, and that for hypodermic use at from 15 to 60 grains.—*Lancet*, Dec. 24, 1887.

Sub-Benzoate of Bismuth as an Escharotic.—Dr. Allen J. Smith, of Philadelphia, says: In the treatment of a phagedenic tendency in several cases of chancroids in the venereal wards of the Philadelphia Hospital, the writer, then on duty as a resident physician, became satisfied of the faulty character of the local measures, in that the escharotics usually employed were too severe for use, except with anæsthetics, and had to be applied too rapidly because of their excessive action. Recalling certain characteristics of several benzoates, a combination of that acid with bismuth suggested itself as of possible service; and acting upon this idea, Mr. Joseph W. England, Chief Druggist of the Hospital, kindly prepared a quantity of the oxy- or sub-benzoate for trial. Bismuth subnitrate was treated with nitric acid, heated and dissolved. To this, hot water in small quantities at a time was added until a marked opalescence was obtained; and the solution thus prepared added slowly and with constant stirring to a solution of sodium benzoate in water. The white precipitate was collected, and washed with alcohol to separate any free benzoic acid or sodium benzoate, and then dried. The chemical reactions upon which these steps are based, are in Mr. England's opinion, probably as follows:

$$BiONO_3 + 2HNO_3 = Bi_3NO_3 + H_2O.$$

$$Bi_3NO_3 + NaC_7H_5O_2.H_2O = BiOC_7H_5O_2 + NaNO_3 + 2HNO_3.$$

In the second equation the bismuth salt is precipitated and the nitrate of sodium and nitric acid separated in the filtrate, in which is present also a quantity of free benzoic acid. After drying, a smooth white powder, of a relatively light specific gravity, was obtained. This was employed in dressing the chancroids, just as iodoform or other antiseptic powders are used; the sore being carefully cleansed, a little of the powder was dusted over the surface, and the dressing completed with some simple bland ointment. For a short time no sensation whatever was experienced, then a warmth of the part, and in about ten minutes a burning and tingling sensation manifested itself and continued for several hours—not severe enough in character to render the patient positively uncomfortable, except from excitations of the part, which were afterward controlled by camphor or bromide of potash administered internally, or by adding a little morphia to the bismuth salt in dressing the sore.

The dressing was renewed once or twice daily, and the bismuth powder employed until the type of the sore had changed—within seventy-two hours in the three cases under the writer's care, the unhealthy purulent surface becoming clean and red with active granulation. After this point had been reached

iodoform was substituted for the sub-benzoate and the sores allowed to heal, which they did thoroughly and quickly.

This material is undoubtedly a mild escharotic when thus applied, with a slow and continued action; and erodes the unhealthy tissues gradually and comparatively painlessly, thus avoiding the inconveniences of such powerful caustics as nitric acid and bromide. It was used as an occasional dressing for indolent leg ulcers with marked benefit, stimulating the sores into granulating surfaces, and cleaning them of the peculiar glazed coating such ulcers often present, just as an occasional application of nitrate of silver would do.—*Medical News*, Dec. 3, 1887.

THE VALUE OF TINCTURE OF STROPHANTHUS.—DR. HOCHHAUS thus summarizes his observations of the effects of tincture of strophanthus:

1. For valvular weakness in the stage of compensation disturbance, tincture of strophanthus is an excellent remedy in certain cases, to retard, strengthen and regulate the cardiac action. The retardation occurs first, while the regulating effect only takes place, as a rule, after a few days. Dyspnœa and œdema are promptly relieved. But the favorable effects, in about one-half the cases, do not appear with the regularity and safety peculiar to digitalis; and in most cases in which strophanthus failed digitalis was effective. Digitalis has, generally, a quicker and more thorough effect, especially in causing diuresis, while strophanthus affects a disturbed respiration far more favorably. It is more difficult to indicate strophanthus than digitalis in cases of valvular weakness, so that it is almost impossible to say beforehand in what cases strophanthus will probably be successful.

2. In chronic degenerations of the cardiac muscle, with usually a small, frequent, and irregular pulse, great difficulty in breathing, and œdemas, tincture of strophanthus may be relied on.

3. In acute and chronic nephritis the effect of strophanthus is not so marked as in the above-mentioned affections. The dyspnœa often yields to its influence as in the other diseases, but the diuresis and œdemas are not favorably affected by it.

4. In cases of palpitation and apnœa of nervous origin strophanthus often gives marked relief.

5. Œdemas of a cachectic character may be also favorably affected by tincture of strophanthus.

6. In some cases the drug has secondary effects on the digestive tract, causing a loathing of food, followed by choking and vomiting after eating, and sometimes by severe diarrhœa. But, as a rule, the aversion to food is the only disturbance, and this passes off when the stomach becomes used to the drug.

7. Hochhaus advises to begin with doses of gtt. vj, t. i. d., in a tablespoonful of water or wine, and to add gtt. ij daily to the dose until the effect is obtained; though it is not advisable to give more than gtt. xx t. i. d. Gtt. iij t. i. d. is the proper dose to begin with for children, but the doses should not exceed gtt. v, t. i. d.

8. The effect usually appears on the second or third day, and generally lasts a week or two weeks, though there is considerable variation. Hochhaus has never seen a cumulative effect, even after long use of the drug.

9. While strophanthus cannot lay just claim to all the praise bestowed upon it, it is valuable as an occasional substitute for and ally of digitalis.—*Deutsche medicinische Wochenschrift*, No. 43, 1887.

LIGATURE OF THE EPIGASTRIC ARTERY.—Injuries of the epigastric artery are seldom diagnosticated during life. MARINI reports the case of a man, æt. 28, who was stabbed, lost consciousness, and, when he regained consciousness an hour afterwards, complained of great pain in the abdomen. There was but little visible hæmorrhage, but his face and mucous membranes were very pale. One of his wounds was in the eighth left intercostal space, penetrating the chest and abdomen, and the omentum protruded. The other wound was 6 cm. below the umbilicus, and 4 cm. to the left of the middle line, and bled only when touched. The diagnosis of injury of the epigastric artery was made from the seat of the wound, the free hæmorrhage when its lips were separated, diminution of the hæmorrhage on pressure above Poupart's ligament, and the presence of a considerable quantity of blood in the peritoneal cavity. Marini cut down on the artery, and found it completely divided. Hæmorrhage ceased when the two ends were tied. A piece of omentum, that became prolapsed during the operation, was excised, and the wound dressed antiseptically. The other wound healed by first intention, after the piece of omentum was cut off. The patient recovered without bad symptoms.—*Lo Sperimentale*, September, 1887.

BRAIDED SILK SUTURES IN OPERATIONS FOR LACERATED CERVIX AND PERINEUM.—DR. J. N. MARTIN, of the University of Michigan, says: I have used silk sutures in thirteen cases with exceedingly good results, and Prof. Dunster has used it exclusively for two and a half years with most excellent results. I claim for silk sutures:

1. They are as easily introduced as silver wire sutures.

2. Easier to tie silk and adjust the parts than to twist silver wire sutures.

3. Much less irritation to the patient (especially in the perineum) while the sutures are *in situ*, which is important.

4. Removal of silk sutures is very much less painful.

5. Silk sutures give as good results as silver wire sutures.

The *hard braided* silk should be used for the sutures (about No. 10 for the perineum, and a size or two smaller for the cervix), and should be rendered thoroughly antiseptic before and after waxing in bichloride of mercury solution (1 to 800 or 1 to 1,000) or carbolic acid solution. In tying braided silk one important precaution is necessary: it is best to make the knot with a triple tie, and the last tie to be drawn down tightly or it may become untied.—*Med. News*, December 3, 1887.

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PUBLISHED WEEKLY.

THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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A STATE BOARD OF MEDICAL EXAMINERS.

It being admitted that the chief object of laws to regulate the education and practice of the medical profession is to protect the people by enforcing a fair standard of both general and professional education for all who are allowed to practice any department of the healing art, it must be admitted, also, that a competent and efficient State Board of Medical Examiners is a necessary part of all such laws. The education and conduct of the members of the clerical profession are regulated by the Conferences, Presbyteries, Synods, etc., of the several denominations, to some one of which every clergyman is supposed to be amenable; while that of the members of the legal profession is conveniently regulated by the Judges of the several courts. But in the medical profession there are no such complete and authoritative organizations as those alluded to in the clerical, or such reliable and impartial tribunals as the Judges of the several courts for the legal, and consequently some different method must be devised for appointing and perpetuating the desired State Board of Medical Examiners in each State.

After reviewing the practical results of all the various attempts to establish boards of censors in connection with medical societies, and State Boards of Examiners by appointment of judges of courts, or by the Governors of States, either on the nomination of State Medical Societies or without such nominations, we are satisfied that no better method can be devised, than to make it the duty of the Governor of the State to appoint all the members of the State Board of Medical Examiners, the same to be approved by the Senate; provided that no person should be eligible for appointment on such Board who was not possessed of a good general and professional education and had been engaged in the reputable practice of his profession at least ten years. There should be no mention or allusion in the law or in any of its provisions to so-called schools or theories in medicine. The appointing power should be limited only to the selection of men of known scientific and professional attainments and good character, and the Board itself should have but one standard of requirements and examinations for all candidates who may come before it. When the Government, through the agency of its Examining Board, has secured to the people a medical profession all the members of which have given satisfactory evidence of having acquired a good general and scientific education, and a thorough knowledge of all the departments of medical science and practice, it has fulfilled its duty. Whether the men or women thus found qualified and registered as legal members of the medical profession shall, in their intercourse with their patients, prescribe a large dose or a small one, or shall select their drugs in accordance with one theory or another, must be left to the judgment and conscience of each individual.

It would be a good rule to make the State Board consist of nine members, each holding office three years, but eligible for reappointment. Whether the appointing power should be prohibited from appointing any person holding an official position in a medical college either as an officer or teacher, or whether he should be required to select one member of the Board from the faculty of every legally established medical college in the State, is a question concerning which there may be differences of opinion. Probably the first alternative would meet with the most general approval.

ELECTRICITY IN THE TREATMENT OF FIBROID TUMORS.

At the last meeting of the British Medical Association an interesting paper on this subject was read by the great exponent of the use of electricity in fibroid tumors of the uterus, DR. G. APOSTOLI, of Paris; this paper, with one on the same subject by DR. W. E. STEAVENSON, is published in the *British Medical Journal*, of October 1. Two such papers bearing on this subject are particularly interesting in that they set forth the conservative principles of a specialty that is too much, or likely to be too much, an operative specialty.

What Dr. Apostoli has done in the application of electricity to tumors of the uterus has been, in a few

words, to supplant the old methods of operating by a method that is precise, energetic, tolerable, better localized, thoroughly under control, and more scientifically exact. He made it precise by the introduction of new galvanometers of intensity, exact counters and measures of the electric current; energetic by a novel service of high intensities of current; tolerable, notwithstanding the large doses of electricity, by introducing a new form of electrode, the wetted clay, thus making the cutaneous pole harmless, and permitting the transmission through it of a current of signal medical intensity; he localized it better by the direct application of the active pole, through the vagina, to the uterus, either in its cavity or into the fibroid deposits; and he brought it thoroughly under control by the exclusive use of the unipolar method, thus applying to the diseased uterus a continuous galvanic current of sufficient intensity and duration to produce the required effect. This application, generally inaccurately described as electrolytic, says Dr. Apostoli, should be defined as a galvano-chemical cauterization—a cauterization purely chemical, with two successive and distinct effects developed in the course of the current: *First*, a tangible effect at the points of entry and exit of the current, which, according to the dose and duration, will be a chemical cauterization more or less severe (but not thermic), variable in conformity with the pole, and different in its character at the two poles. At the will of the operator this polar action may be monopolar or bipolar. *Second*, the effect resulting from the circulation of the current from one pole to the other, and therefore called interpolar action; an action that follows every electrical application, setting up a subsequent process of disintegration of the morbid products through which it passes.

But what are the clinical and purely practical results of Apostoli's method? Before going farther it must be said that the positive pole is the express remedy for hæmorrhagic fibroids, and the negative for non-hæmorrhagic—the positive being a hæmostatic, and the negative producing congestion. If both in their secondary interstitial action induce a regression of the tumor, Apostoli believes that the negative has the greater potency in this respect. Further, if the negative pole be made to enter a fibroid deposit by a puncture, it will insure a more rapid diminution of the tumor; and the negative pole, naturally a congester and but little hæmostatic, finally becomes markedly hæmostatic, and will arrest troublesome hæmorrhage after a certain time; an effect caused by the cutting off of the supplementary circulation, by the rapid atrophy due to the action of the negative current. For the use of galvano-puncture there are certain rules, that may be thus summarized: 1. Absolute and regular antiseptic irrigation of the vagina, before and after each operation. 2. Use as the puncturing instrument the small steel trocar or needle, and let the punctures be shallow, that is, not deeper than from 1 to 2 cm. 3. Make the punctures on the most prominent part of the fibroid; whenever possible in the posterior cul-de-sac. 4. Make the punctures without speculum. Slide the trocar through the celluloid sheath that protects the vagina, after having examined and chosen by touch the point where the puncture is to be made. 5. Ascertain the seat of any pulsation, so as to avoid wounding an important vessel. 6. In case of unusual hæmorrhage immediately dilate the vagina with an expanding speculum, and if necessary put on pressure forceps to the bleeding point.

In answering the question as to the anatomical and clinical results, as regards the material changes it may be affirmed, says Apostoli, that every fibroid tumor submitted to this treatment, sometimes after so short a time as one month, but certainly when the treatment is fully carried out, will undergo a manifest reduction appreciable by the touch and demonstrable by internal measurement. The further diminution of the tumor, which continues for some months, varying in amount from a fifth to one-half of the original volume, is generally associated with a coincident, and equal accumulation of subcutaneous adipose tissue on the abdominal walls. The regression of the tumor is not only apparent during the time of active treatment, but goes on continuously after it has been suspended, and is the persistent proof of the enduring influence of the electrical operations. Simultaneous with the decrease of the bulk of the tumor occurs the liberation of the tumor from its local attachments. The tumor, that at the beginning of treatment was immovable, is made to change its position more and more as the absorption of the enveloping tissues advances. And with the regression of the tumor is a tendency of the tumor to separate itself from the uterus, to become more distinctly subperitoneal, to detach its mass from the uterine wall, and to assume more of a pedunculated form. The clinical are not less striking than the anatomical results. Apostoli generalizes the extent and importance of these results, by saying that 95 times out of 100 they comprise the suppression of all the miseries constituting the fibroidal symptomatology, which may be thus categorically summarized: hæmorrhages, the troubles of menstruation, dysmenorrhœa, amenorrhœa, nerv-

ous disturbances, the direct pains in the growth itself and from mechanical pressure, and the harassing series of reflex actions. And while this therapeutical resource carries us so far as the sensible reduction of the fibroid tumors, and not to their total absorption, yet their complete removal may be anticipated, with a complete restoration of health. The greater number of the women that persist in the necessary treatment are not only cured, but remain well. In some of his early cases Apostoli found an apparently absolute intolerance to high intensities of current, and he abandoned the method in these cases; at present he would simply chloroform the patients, and operate to the fullest extent. And in regard to such cases he lays down the following rule: No operator should admit the failure of intra-uterine galvano-cauterization before having had recourse to the galvano-punctures, which we must enforce either with or without anæsthesia.

From July, 1882 to July, 1887, Apostoli made 5,201 applications of the continuous galvanic current, for the following affections: Fibroids of the uterus—polypi; entire or partial hypertrophies of the uterus; subinvolutions; acute and chronic metritis and endometritis; ulcerations of the cervix; peri-uterine inflammations (perimetritis, parametritis, cellulitis, phlegmons); ovaralgia; ovaritis and peri-ovaritis; salpingitis; ovarian and tubular cysts at an early stage; atresia; and hæmatocele. The 5,201 operations were made on 403 patients (this number does not include the patients on whom faradism was used.) Of this number he lost two patients, the responsibility for which he takes upon himself, as well as of ten phlegmons that he either excited or aggravated; and in speaking of these he takes occasion to warn against careless use of the method, especially of the negative pole when there is any trace of peri-uterine inflammation present. "You must feel your way, testing the susceptibility you have to work upon by two or three preliminary operations, in which you give doses so feeble that they only serve to enlighten you, and to habituate the patient, so as to lead on safely to the use of higher intensities."

MEDICAL SOCIETY PROCEEDINGS.—We are pleased to receive good reports of the papers, cases and discussions presented to the medical societies in all parts of the country, and happy to publish them as fully as our space will permit. Recently some societies have been sending us reports of *discussions* on papers that had been read, without including either copies of the papers or even brief abstracts of them. Such discussions, without the papers or abstracts of them, to which those participating in the discussion are constantly alluding, lose half their value and often contain sentences unintelligible to readers of THE JOURNAL. We must decline to use such reports.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, October 12, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

Dr. T. C. Smith read the history of the case and presented the specimen, for DR. P. J. MURPHY, of

A UTERINE FIBROMA REMOVED PER VAGINAM.

Mrs. McG., white, æt. 40, born in Maryland. Admitted to Columbia Hospital for Women, Sept. 8, 1887. She is married and has had two children, the youngest 13 years old. Had a miscarriage from some unknown cause four years ago and has complained ever since of considerable pain in back and hypogastrium, shooting down the legs. For the past three years has had a profuse leucorrhœal discharge which was at times bloody and again very watery. During the past three months the odor of this flow has been very offensive. Menses regular and profuse lasting about four days, the last epoch having been in the latter part of August. She has very frequent and severe attacks of intermenstrual hæmorrhage from the slightest causes, the most frequent being excitement; appetite poor; frequent attacks of diarrhœa and of severe headache. She presents the appearance of a woman subjected to severe constitutional drain; the face has a pale and leaden hue. She was kept in bed until Sept. 11, when she was examined with the following results:

The outline of the uterus not distinctly ascertained; but bimanually a large globular growth three or four inches in diameter was found slightly protruding into vagina from the canal of the cervix uteri. Its borders could be followed into the cervical canal but owing to the size of the growth its attachments could not be definitely made out. The watery discharge is now profuse and has an odor not entirely unlike that of carcinomatous discharges. It was thought to be a pediculated fibroid of the uterus although the density of the foreign body was not marked. The odor now became so offensive that the patient was isolated. This however was rendered unnecessary by a few hot carbolized douches. The urine was not voided freely and it was examined, although nothing other than a general diminution of salts was found.

Sept. 17. Dr. Jas. E. Morgan came in consultation and advised early removal of the growth to save the woman's life. It was thought best to improve her general condition previous to operating and she was

given the following tonic: sulphate of quinia, 30 grains, tincture of chloride of iron, 4 drachms, to mix and take 30 drops in water three times daily. Milk punch every four hours, beef tea, etc. Three days later she had a severe attack of diarrhœa accompanied by rectal tenesmus, which however soon yielded to ordinary doses of bismuth and opium.

25. Iron and quinia discontinued. Gave the following: Make 36 grs. of ergotin, 2 grs. of extract of cannabis indica and ½ gr. of strychnia into 12 pills, to take one every four hours. Menses appeared on the 28th and lasted until Oct. 5, but not so profuse as usual although more painful.

Oct. 6. Growth protruded more and was attached on every side to cervical canal. Uterus now felt distinctly and is enlarged, hard and of irregular shape, the lateral diameter being disproportionately increased.

8. Patient anæsthetized and the foreign body removed. It was first drawn through the vulva (the patient being in the lithotomy position), and its sessile pedicle which was found attached to nearly the entire surface of cervical canal and fundus uteri, was severed by Thomas' saw scoop, Yarrow's modification; very little hæmorrhage occurred as the hard fibrous pedicle was sawn through.

The uterus and vagina were washed out by a carbolized douche at a temperature of 110° F., and a pledget of styptic cotton placed against the cervix uteri. Some oozing began about an hour after the operation but soon ceased. Patient was very weak but improved rapidly after the oozing ceased and is apparently making an uninterrupted recovery. The tumor removed is globular having a circumference of about 8 inches in every direction and weighs 6 oz.

The President read a letter from DR. ALEX. DUNLAP, of Springfield, Ohio, in which he gives the following interesting case:

A LAPAROTOMY ON A FEMALE CHILD NOT AN HOUR OLD.

The child was perfect in every respect, vigorous and healthy, except that the bowels, commencing close to the duodendum, down to the sigmoid of the colon and omentum, with the mesentery, dragged through a small opening in the umbilicus, and had been developed in a sac formed in the umbilical cord. The sac would have contained about a pound and a half. I found that it was impossible to return them through the opening without enlarging it, and then when I commenced to enlarge the opening I found that the abdominal cavity was so contracted from the absence of the bowels being developed in it that it would not contain them without enlarging it. I therefore made an opening, commencing in the umbilicus, running up two inches, and then began stretching the walls of the abdomen with my fingers; then catching portions of the bowels and forcing them down into the cavity, while assistants, with hooks passed through the cut edges of the walls of the abdomen, held them firmly up. In about twenty minutes I succeeded in forcing them in and closing the wound with five sutures and ligatures to the cord close up to the natural skin. The operation was performed October 2, 1887, without chloroform or an anæsthetic of any kind, and as far as any visible signs were manifested by the child in struggling, crying, shock or pulse, that it was suffering pain there was none to be seen. For all that you could see the child might have been enjoying the operation hugely, nor has there been the least unpleasant symptom since. I gave it a small teaspoonful of castor oil to be sure to get an operation from the bowels, which operated freely. I have given five or six doses of one-third of a drop of tincture opii. The child sleeps and nurses well, the stitches are out, and the cord is separating nicely. How long after birth before the nerves of sensation are brought into action? They were certainly not in action when I performed this operation.

DISCUSSION ON BATTEY'S OPERATION.

DR. ROBERT REYBURN, in opening the discussion on the case of Battey's operation reported by Dr. Jos. Taber Johnson at the last meeting, stated that he was not one of those that underrated the achievements of abdominal surgery; on the contrary he was a firm advocate for the performance of operations upon this region of the body when absolutely necessery for the saving of the life of the patient, or for the removal of the ovaries when hopelessly and incurably diseased. The case reported (on examination of the ovaries removed) showed that it did not belong to either of these two classes, and hence was not a proper case for operation. In his opinion the cases properly and absolutely requiring this operation were very rare, and in an active practice of thirty-one years, he had never operated upon a case, nor had he seen one that he considered required it. He had, however, witnessed the operation a number of times and the results were, in his opinion, not at all satisfactory. Some of the patients, it is true, were cured, but in a great proportion of the cases the operation was either a failure or followed by periodical pelvic pains, attacks of neuralgia, etc., which rendered their condition as bad as before the operation. The technique of operations upon the abdomen had become so perfect, and the risks of the operation so diminished by the improved antiseptic methods, as to induce the performance of an immense number of operations that should never have been performed. In his experience the patients that desired the operation belonged to one of two classes, either obstinate cases of dysmenorrhœa, or, perhaps, of evil habits, and who required as much moral as medical treatment. He called attention to a paper by Dr. Coe, published in the *Medical Record*, of September 24, 1887. Dr. Coe states that he has known severe pelvic pains, neuralgia, flushings of face and other vaso-motor disturbances to occur at the time of the former menstrual period, and in these cases their condition was worse than before the operation. Two cases of violent congestive headache are continuing for three years after the operation. He believed that the operation was being performed far too frequently, and that it was time for the profession to call a halt and forbid such unnecessary operations.

DR. GODDING had come to the Society to learn and not to hear an experience that was practically *nil.* A woman, who had had her ovaries removed at the Pennsylvania Hospital for the Insane for recurrent mania, came under his care about one year after. She had previously been under his charge and not having improved she went to that hospital and her ovaries were removed. Success was apparent and she was removed from that institution. In a year's time the attacks of mania recurred with their former severity. There was no return of menstruation. She came under his care four or five times after this. It was near the menopause as she was 40 or 45 years old, but she kept on having the attacks. She would improve and leave the hospital, but would return in a month or two as bad as ever. The artificial menopause was produced and her general health improved.

Bearing on insanity: A young girl, about 12 or 13 year's old, was under his care in 1876 and '77, for about eighteen months. Menstruation was not established. It was as pure a case of moral insanity as had ever come under his care. For sin and iniquity she took the lead; at times the attacks were aggravated; and she was always erotic. Restraint was used; anodynes and anæsthetics were given; and all treatment seemed baffled. Every means of reformation was tried in vain; and the mother's use of the rod was fruitless. He lost sight of her. She was removed to the Worcester Hospital for the Chronic Insane, under Dr. Quimby, whose opinion coincided with his; and she was advised to go home on account of a great aversion to hospital treatment. The menstrual function appeared but she became worse. Finally she fell into Dr. Goldsmith's hands. At a meeting of the Superintendents of Institutions for the treatment of the Insane, Dr. Goldsmith read a valuable paper (*Journal of Insanity*, 1883) bearing on this case. Dr. H. R. Stohrer was invited to discuss the subject of Battey's operation and he recommended it in this case. It was performed and the girl resumed her natural, amiable disposition. A year after she was perfectly well. After such a result he felt anxious to hear from those present the changes wrought in menstrual conditions by the removal of the ovaries. Of course we must not be led astray by extreme cases. Several cases are on record of the removal of the testicles for nervous derangements.

DR. T. C. SMITH regretted that Dr. Reyburn had condemned the operation simply because it is sometimes performed unsuccessfully or unnecessarily in one class of cases. In other cases it is justifiable. A woman has dysmenorrhœa for years and years; she goes from specialist to specialist without receiving any benefit; and after years of fruitless treatment she falls into the hands of the surgeon who has removed the ovaries in women similarly affected and is offered the hope of a cure. What would Dr. Reyburn do in such a case? How long would he wait? He has a case that will ultimately call for the removal of the ovaries. She became pregnant three months after marriage. She was suddenly seized with a pain in the left side and discovered a lump as large as a hen's egg. She called in a physician who suspected an extra-uterine pregnancy, but she went to term. Six months ago he examined the same woman and found the left ovary the size of an egg and very painful. It does not yield to treatment. Is this a case for operation? The size does not demand it but the pain is increasing. Suppose Dr. Reyburn has a bleeding fibroid that has resisted all other treatment would he refuse to establish the menopause by removing the ovaries? Or suppose he has a pyo-salpinx would he permit it to rupture? What would he do in such a case? He should be more explicit.

DR. REYBURN regretted that he had not been understood. He considers the first case mentioned by Dr. Godding a clear case of the abuse of the operation (?). A great many operations are performed when the disease does not threaten life. The ovaries are removed when there is no appreciable disease but only the evidence of a perverted function. If the woman were going about would he remove the ovaries simply because she had a pain in her side? No. Such is not a case for operation. If the disease goes on, yes. Loss of texture such as to endanger life, and bleeding tumors may justify the operation. It is not always justifiable in bleeding fibroids. Better dilate the uterus and remove the fibroid. Nowadays surgeons and gynecologists must have a few ovaries in their pockets to be fashionable.

DR. FRY asked, From the history of the case and the specimen presented was the operation justifiable? The speakers had confounded Tait's and Battey's operations. The former removed the tubes and ovaries for a pathological condition; and the latter simply to establish the menopause artificially without regard to disease of the organs themselves. At the last meeting of the American Gynecological Society, Dr. Polk expressed the opinion that the operation was not called for, Dr. Martin, of Berlin, cured his cases by other means, and Emmet let the ovaries alone. After Dr. Johnson had loosened the adhesions the operation should have ended and the abdominal wound have been stitched. If the operator finds healthy tubes and ovaries he is not justified in removing them. The question is whether these cases can be relieved by less violent means. In this case the operation was scarcely justifiable and Dr. J. should have been satisfied when he saw the ovaries were in such good condition with breaking up the adhesions and leaving them.

DR. KING: When the operation was first introduced the dangers were anticipated and stated. It is too frequently performed where it is not absolutely necessary; but we are all human and liable to err. Battey's operation has had its day as a fashionable surgical procedure. Years of practice and experience have enabled surgeons to formulate better rules for its performance than they had at the beginning. At the last meeting of the American Gynecological Society, Battey stated the results of his operations: some were not cured; some were only benefited a little; while the majority "bounded like an India-rubber ball, into health." Women hear of others being relieved and go from one surgeon to another until they find one willing to operate, and he probably removes the healthy ovaries. Dr. Polk opens the

abdomen, breaks up the adhesions and leaves the healthy ovaries. This is an advance and does not mutilate. Some are relieved by time. Sometime ago Dr. Johnson suggested Battey's operation in an old maid. She afterwards came under his care. It was near the menopause; he used Goodell's method of dilatation; and she had a delightful relief for two or three months at a time. The loss of the ovaries makes very little difference in those who do not contemplate matrimony; but these organs are of great consequence to poor women in whose family there is an entailed estate. The most interesting and important question of gynecology is the reason for women having such diseases, as cysts, as to call for such mutilating operations. Have we no means of prophylaxis?

DR. KLEINSCHMIDT: There is one interesting point raised by Dr. King. Why do women of this age have cysts and other diseases of the ovaries? They are not more frequent in this age but abdominal surgery has advanced so far that they are easily detected. The ancients found diseased ovaries but did not understand them. Hyrtl has a work on spaying women in which there is a case of a man spaying his daughter. Dr. Smith's first case should have received the galvanic treatment and if that failed preparatory laparotomy. Twenty years ago, in discussing ovariotomy, he remembers that Dr. King advanced the opinion that the time would come when we would be able to tell these growths with certainty. It is easier to operate at an early period of the disease. If the ovary in Dr. Smith's case is diseased let him find out what is the matter with it.

DR. BERMANN: The question raised by Dr. King is an important one. If the women of to-day suffer more than those of former times he thought it might be attributed to two causes, viz.: constipation and tight lacing.

DR. FRY had had a case under obsevation for six or seven years. The woman was 32 years old and one ovary was prolapsed into the cul-de-sac. He would put her into the knee-chest position, relieve the retroflexion and tampon the vagina. She was confined to the bed most of the time. She would get better and the treatment would be discontinued. She returned several months ago and he determined to try electricity. He has been using the galvanic current about two months, but has also used the packs. She has improved and the ovary is smaller, but he is not certain that the electricity is entitled to all the credit. He has considered removal of the ovaries but the woman's family oppose it. Cases sometimes die and if one were his he thought his conscience would bother him.

DR. JOHNSON had not intended to say anything as the members understood his opinion on this subject. His views have not changed. He has reflected on every case before he operated because he did not desire to be rash. He sees a great many cases but does not operate on half the women who desire to have their ovaries removed. In some respects he agrees with Dr. Reyburn, but would not take the same ground. The majority of women he sees are chronic sufferers and cannot be cured by the means at hand. They go from doctor to doctor, undergoing various methods of treatment, but grow worse; everything fails and they are willing to run the risks of this operation. He might operate and the result might not be as good as he expected, or an absolute failure. Of course he had made a mistake but this should not lead him to abandon the operation, because mistakes are made in all branches of surgery, and yet they are considered perfectly justifiable. He does not recommend every ovary to be removed. Battey's operation is for the removal of the normal ovaries and was called normal ovariotomy. Battey operates to bring on the menopause and that was his motive in the case reported. It was a matter of dollars with poor women; many of them are bed-ridden for months and have tried all sorts of treatment without benefit and their only hope seems to be in the removal of the ovaries. He holds that the operation should not be performed until she has had all the advantages of general medicine. Give electricity a fair trial. He has received letters filled with grateful expressions from women he has operated on who are now enjoying excellent health. In a case Dr. Ober is now attending the woman was relieved for a time but is now growing worse. Perhaps the convulsions are due to a third ovary. Of the 54 cases presented by Dr. Battey, 33 were cured; 8 much improved; 5 a little improved; and 8 not at all improved. Of these 54 cases there was complete menopause in 50, and continued menstruation in 4. Tate removed the ovaries in 50 and produced the menopause in every case and cured them to. Dr. Godding's experience is *nil;* one case did well and the other is cured. He would remind Dr. Fry that Dr. Polk did not have everything his way in the discussion referred to. Dr. Goodell opposed two operations instead of one. Dr. Bantock agreed with Dr. Goodell that the alternative recommended by Dr. Polk was not the correct one. The operator does not desire to unsex the woman, the disease has already done that. He has a patient under observation at present who is sane for three weeks out of every four, but during her menstrual period she is a confirmed nymphomaniac and uses the most vulgar language. He is in doubt as to the proper course to pursue. Dr. Godding's successful case prompts him to operate. It is true Goodell's asylum patient died, but the hygiene of the institution may have been bad, and if she had been out she might have been cured. If the trouble seems to be connected with menstruation the proper procedure would seem to be to produce the menopause.

ST. LOUIS MEDICAL SOCIETY.

Stated Meeting, November 5, 1887.

THE PRESIDENT, S. POLLAK, M.D., IN THE CHAIR.

DR. T. F. PREWITT presented a case of

MULTIPLE TUMORS OF THE HEAD.

The case is of a gentleman whose head is covered with a number of tumors, some on the forehead, nose and lips being developed to a less degree. They

are extraordinary in many respects, and would tax the skill of many diagnosticians. He has had them for twenty five years. They have not impaired his health, but are merely annoying.

If there had been only one of these tumors, I would have been impressed with the idea that it was a sebaceous cyst, because it fluctuates distinctly. But I have excluded that. Then it occurred to me that possibly it was sarcoma; but the history is not that of sarcoma, which is of rapid growth, and primary sarcoma of the skin is a rare thing. And then looking at the development on the face and the character of the skin, which the gentlemen will notice is muddy, that condition which we so frequently see in young persons subject to affections of the sebaceous glands, it occurred to me that it was an adenomatous condition, that the glands of the skin were involved. But that was not entirely satisfactory to me; the tumors are very vascular and bleed quite freely. In one which I cut off I had to arrest the hæmorrhage with pressure and applied the electrolytic needle. Professor Brœmer and Dr. Rohlfing examined sections from it and pronounced it adeno-sarcoma. The great vascularity suggested to me that there was some sarcomatous degeneration, and I expressed myself to that effect. The next question is, what can be done? I propose to try electrolysis on some at least, and endeavor to get rid of them, even if reproduced. If it was a single tumor I would not hesitate to cut it out. One or two of them have been cut out, and he thinks they have not grown again, but they can be seen to be growing at the base of the cicatrix. He does not know how they first came. He is 52 years old.

Dr. A. H. Ohmann-Dusmenil: The disease is not one, because we have in the lower part tubercles, and in the upper part masses undergoing cystic degeneration, or through pressure the skin becoming very thin. I don't think it fair to ask a diagnosis without giving a specimen for examination. Some look like lipomata, others like fibromata, whilst others have some hardened matter, which may be inspissated sebum or calcareous degeneration of the tissues. It is not a pure case of fibroma of the skin, as that is generally multiple, and more or less pedunculated. Nor is it lipoma or lymphangioma, which the lower portion simulates. I do not remember a similar case. There is involvement of the subcutaneous connective tissue.

Dr. E. H. Gregory: We understand that these tumors are not growing; therefore these masses are wanting in one of the essentials of a tumor, namely, indefinite and continuous growth. We do not recognize any overgrowing mass as a tumor unless it grows continuously, indefinitely, and whenever a mass comes under our observation that has existed for months without any material change in its bulk, it becomes a question whether it is a typical tumor or not. If we are looking for a cause of these masses, I would attribute it to a vegetable parasite, or some agency of irritation, and I would place it in that class of diseases, the so-called granulomata. As for adeno-sarcoma, that means nothing more than overgrowth of the glands of the skin and its connective tissues, involving perhaps more than one element of the skin. The question is, is it an overgrowth after the method of a tumor, or an overgrowth from irritation? I would place it among the latter.

Dr. F. J. Lutz reported a case of

GUNSHOT WOUND OF THE INTESTINE.

The case occurred last Saturday night. A man, æt. 30, was shot by another with a revolver carrying a 38-calibre bullet, the ball entering ¾ inch below the umbilicus in the median line. He was taken to the City Hospital. The abdomen was distended considerably, there was resonance over the liver, indicating that gas was in the peritoneal cavity; a long probe entered the cavity in a downward, outward and backward direction to the right. There was considerable pain. On opening the cavity, we found that very little of the contents of the bowel were in the peritoneal space, as the intestines were empty. The jejunum had six openings in it, and the ileum two. The mesentery was cut in two places, and the parietal layer of the peritoneum covering the posterior side of the cavity to the right of the common iliac artery had a rent in it which was the beginning of an opening which ran down toward the ileum. The openings in the bowel were united with silk (iron-dyed) sutures, and the others with catgut sutures. The opening of the ileum being so near the mesentery, I concluded that the continuous suture going clear around the bowel would be the most rapid and equally as safe a method of suturing it. The bullet was not extracted ante-mortem. No large blood vessel was wounded. The patient died. The openings which had been sewed I found perfectly water-tight at the autopsy. This is another illustration of what I have endeavored to express on several occasions, that penetrating wounds of the abdomen should be treated with free opening. One point in the technique is that the long continuous exposure of the intestines to the air is no mean factor in determining the fatal issue of the cases. Perhaps it would be more perfect if some means could be invented to keep the intestines at a proper temperature—and it is necessary to expose them well in order to sew up a rent in them—and the ordinary cloths wrung out in hot water cool so rapidly that they have hardly any influence in keeping a proper temperature. In this case we irrigated the cavity with hot water. Whilst the proportion of recoveries after this operation is small, still it is large enough to favor its performance.

Dr. Lutz also reported a case of

TRAUMATIC PERITONITIS.

The patient was kicked six weeks ago in the left groin, by a cow, and as a result the glands of the groin inflamed and suppurated, and I removed a nest of them. I removed those on the line below Poupart's ligament. Subsequently several of the glands high up inflamed. I made an incision and cleaned out the cavity and united the two incisions by a drainage-tube. The man's general condition was bad. He seemed anæmic, had chills, but never complained of trouble in the abdomen until two days before death, nor was the abdomen distended.

He was not under the influence of opium. A day and a half before death he had a chill and high fever, his abdomen became distended, very painful, and he went into a comatose condition, and died 36 hours after I first observed that the peritoneum was involved. On opening the cadaver I found a typical case of peritonitis, septic, coils of the intestine glued together with exudate, and a small hole half the thickness of a pencil; ulceration had taken place through the wall of the abdomen, so that if laparotomy had been performed in this case, and the cavity thoughly cleansed, I think his chances would have been better.

DR. LUTZ also reported a case of

LAPAROTOMY FOR TYPHLITIS.

The man came into the hospital on Tuesday; he had a tumor in the right iliac region, about as large as an ordinary fist. He had had it for several months and it was very painful and tender. We had him in the clinic on Wednesday, and after he left it peritonitis set up, which increased and became violent thereafter. This morning there was stercoraceous vomiting. The pulse had been 115 and full, but this morning it was 100 and full. There was a tumor in the side, dulness extending to the right inguinal region. On opening it an immense quantity of pus escaped, pus of a fæcal odor. The coils of the jejunum and ileum were matted together by exudation, and on the right side the omentum was so firmly bound down in the neighborhood of the internal ring of the inguinal canal that when I felt with the fingers and found a cavity that contained pus, and this was so firmly adherent, I thought that there was in addition a strangulated hernia. However, I could pull it out readily, and we washed it with a flush of hot water. We found a knuckle that was the point strangulated, a part of the gut bent on itself and united by exudations, and glued to the anterior abdominal wall in front of the bladder. There was considerable bleeding, caused by the separation of the intestines necessary to find the strangulated portion. The patient died, as we expected. I believe it was one of those cases in which an early operation would have given him some chance. If it was a perityphlitic abscess at first, a lumbar incision might have saved him. Perhaps these operations are not triumphs of the surgical art, but they teach valuable lessons. The first the lack of proper appreciation of the surroundings of the case, the lack of masterly inactivity. The third indicates that early incisions should be made to prevent complications such as came up in this case.

DR. E. H. GREGORY: What were the symptoms presented by the first case before the operation?

DR. LUTZ: His circulation was good, pulse was strong, temperature good; the abdomen was distended, then—which to me was the best indication of what should be done—the probe passed to such a distance into the peritoneal cavity. There was no fæcal matter in the abdominal cavity.

DR. GREGORY: And there was no hæmorrhage in the cavity! Here are three important points. I am an advocate of the operation, but I have never cut loose from the traditions of the profession. I am a link between the two methods. The more I see of the inside of men's bellies in these cases, the more I am disposed to hesitate about opening them. Every case says to me, "go slow." This case had a good pulse, good temperature, and there were no urgent symptoms. But there was a penetrating wound. A penetrating wound of the belly is not a warrant for laparotomy. When there are urgent symptoms that declare that the patient cannot be worsted by the operation, symptoms that make us feel that he will not recover; he has intense pain, vomiting, symptoms that look towards collapse, we should operate. But if the man has a good temperature and pulse, and a penetrating wound of the abdomen, with my limited observation, I should hesitate; I should wait. I have long been impressed with the belief that the simple fact that the intestine is wounded does not carry with it the absolute certainty of extravasation. From actual sight, it is known that many wounds of the intestines heal without extravasation—wounds that you can put your finger in. A wound that is necessarily fatal will be attended with symptoms.

DR. LUTZ: Of course no one has greater admiration for any view Dr. Gregory may express than I. However, there seems to be a radical difference of opinion in this case. Never, in a case of penetrating wound of the abdomen with the symptoms that Dr. Gregory indicated, should a surgeon perform laparotomy, because the patient is going to die anyhow; he has septic peritonitis. I don't believe that people recover that have extravasation, the result of gunshot wounds of the intestines. I have yet to see on the post-mortem table a gunshot wound of the intestine that is agglutinated and shut up. On the contrary, I find fæcal matter, inflammation, etc. The best possible condition for the recovery from any operation is that the patient is in the best physical condition, pulse and temperature good, before the changes that necessarily result in death have had an opportunity to begin, before fæcal matter has had time to be carried across the peritoneal membrane. The time is unquestionably then, when the wound is first inflicted. Again, the mere performance of laparotomy after an incised wound does not imply more than an explorative incision. If a man has a simple wound of the abdominal parietes, whether it penetrates or not—as I have seen in a case in which there were no symptoms, when the wound was enlarged, a knuckle of the intestine or a piece of omentum was in the wound, the internal end of which was four times as large as the external one. The simple enlargement of the wound does not add gravity to the case, but it does that which is of the utmost importance—it enables the surgeon to approximate the peritoneum, to sew up a rent in the bowel, or ligature a blood-vessel. If we wait until the urgent symptoms appear, there is no use in performing laparotomy; allow him to die in peace. I would like to ask Dr. Gregory in how many cases of gunshot wounds of the abdomen he has seen the intestines escape? I have never, in perhaps twenty laparotomies which I have made for gunshot wounds of the abdomen, once seen the intestine escape.

DR. A. H. MEISENBACH: I was present at the operation. The urgent symptoms that Dr. Gregory has described were not present, yet the history of the way in which the wound was received, the caliber of the wound and the direction of the bullet, and an opinion based on the facts and teachings of experimental surgery by Senn, Parkes and others in relation to the proper course to be pursued in gunshot wounds, indicated that this was certainly one of those cases in which to perform laparotomy. If the lesion had not been so severe this would have been one of the best subjects for recovery; but as the operation demonstrated, the lesions were so severe that he would ultimately have succumbed. The case presented several interesting points, one of which was one that Dr. Parkes called attention to, in regard to different missiles moving at different speeds, and character of wounds they produce. The wounds nearest the skin were clean-cut wounds. Those near the right wing of the ilium were ragged ones, one or two in which peritoneum and muscularis were entirely torn away, leaving a valve like opening in the mucous membrane. It seemed impossible that with such injuries the patient could recover without having those wounds closed up. The amount of extravasation must have been very little; the bleeding was very little. The danger generally is not from arterial, but from venous hæmorrhage, that occurs from the mesenteric veins.

In regard to the technique, the length of time is, of course, one of the prime factors that influence the result. In this case the patient was on the table from 11:30 P.M. to almost 3 o'clock in the morning, because the search for, and closure of, the wounds was necessarily very tedious. The continuous suture fulfils everything that is demanded of it, and closes the opening so that nothing will exude, can be more rapidly applied then the Lembert or its modifications, and any one can demonstrate this in an animal. The continuous suture is one that can be easily adjusted; it is the ordinary glover's suture. Anyone that has tried it knows how tedious the Lembert suture is. In a wound of one inch it takes from four to six stitches to close it; and with the hands smeared with blood, the tying of the suture is a difficult operation. The continuous suture of the bowel answers every indication; and even in circular section of the bowel, it can be adjusted in such a way that the bowel can be brought together without injury. Experiments have shown that it takes a very short while for the plastic exudation to close up the holes from which extravasation may take place.

DR. SPENCER GRAVES: It seems to me that there are certain symptoms that would tell us in the majority of cases, whether there is a wound of the intestines or not. The tympanitic resonance, the character of the pulse and the shock—but this is not always a result—I think would determine almost positively in the majority of cases. When there are several wounds of the bowel near together, it is a question whether it would be better to resect the intestine, or to close the several openings. In New York last year, I saw a case operated on by Dr. Bull; he removed sixteen inches of the intestines, and the patient made a perfect recovery.

DR. H. C. FAIRBROTHER: I have recently seen two cases of gunshot wound of the abdomen, and the symptoms were identical, the wounds were in the same place, being one and a half inches below the umbilicus, both cases resulting from shots at short range from revolvers of 32 caliber. In both cases the penetration had a downward course. In both the pulse was good, there was little, if any collapse. There was no great pain, no marked symptoms of general disturbance of the circulation. In one of these cases no operation was performed, perfect rest was maintained, the abdominal surface was covered with warm carbolized applications and recovery ensued. In the other case an operation was performed, three penetrating wounds of the small intestine were found and united, and the patient died. I don't know whether there were penetrating wounds in the first case or not, but the bullet was of a similar size and force and direction.

DR. PREWITT: I have listened with a great deal of interest to the discussion, and I think is is a fortunate thing we have a man like Dr. Gregory, who stands a little in the breach, because abdominal surgery is a new field, and rules in relation to it are not certain yet. Yet with the experience in gunshot wounds there seems to be not much room left for any other procedure. It must be remembered that the course of bullets is very eccentric, and many bullets that strike the walls do not penetrate the cavity, and the patients get well, when it is supposed that they have gunshot wounds of the bowel. I saw a little boy who was shot a little to the right of the umbilicus, and he walked home. I made a little exploration with the probe. He declared that the bullet dropped out and I let him alone and he got well. Such might have been the case in that of Dr. Fairbrother. In the statistics of the late war, Dr. Otis has shown that not a single, solitary case of gunshot wound of the intestine ever got well. Some cases in which it was presumed that the cavity was entered got well, but not where it was certain that such was the case. Of course if we find fæcal matter, it is irrefragable proof of the perforation. But we have cases where there is a wound of the intestines, and yet there is so little evidence, so far as shock is concerned and the absence of meteorism, that it would be impossible to say that there was a wound of the intestine if we would wait for symptoms. If Dr. Fairbrother could kill his patient and examine that abdomen, and demonstrate that there has been a perforation of the intestines, and find that they had healed, it would be one of the grandest achievements of the day. Until that is determined, we must accept it as a rule, that patients do not recover after gunshot wounds of the bowel. It is not so absolutely fatal in gunshot wounds of the large intestine. Where the symptoms that are to be relied upon as positive evidence of perforation of the bowel were present, the patients have always died. It doesn't require to open the abdomen to know this; the proper course is to enlarge the external wound and determine the fact prior to any laparotomy. It must be done within five hours after the infliction of the wound; after this, there is a degree

of congestion that indicates septic peritonitis, consequently, you have to deal with a condition which is most unfavorable. So far as inferior animals are concerned, quite a number of cases have recovered where the intestines were injured, but this is not a criterion, because they will stand more than human beings. In regard to the closure of wounds, Dr. Parkes has shown that it is better to resect a portion of the intestines than to close a number of wounds. The modified Lembert stitch can be done as rapidly as the ordinary whip-stitch, and is quite as effectual.

CHICAGO GYNÆCOLOGICAL SOCIETY.

Regular Meeting, Friday, September 24, 1887.

THE PRESIDENT, CHARLES WARRINGTON EARLE, M.D., IN THE CHAIR.

DR. J. H. ETHERIDGE read a paper entitled:

VAGINAL HYSTERECTOMY; REPORT OF THREE CASES.

(See THE JOURNAL, December 24, 1887.)

DR. CHRISTIAN FENGER made some remarks on

CARCINOMA OF THE CERVIX.

The first specimen was from a woman about 40 years of age, a multipara. She had had symptoms for over a year, and was in rather an emaciated condition, partly on account of chronic bronchitis and a cystic goitre, and partly on account of the carcinoma, where several local operations had been done before. It is a cervix carcinoma, with the cervix involved almost to the internal os, the white mass here below being the carcinoma tissue, and all the rest of the cervix being carcinomatous. The only thing that induced me to operate in this case was the extreme movability of the uterus. As a rule, in carcinomata that have gone as far as this, I do not think operation is advisable; I think it is too late. However, she was not asked by me to be operated upon, but she implored me to operate on her at any risk to her life, and I operated. Before the operation her pulse was 120, and she was, as I stated before, weak, but the uterus was movable and was taken out without any considerable difficulties. Before the end of the operation, which lasted about two hours, she was very weak and almost pulseless. This condition lasted after the operation during the afternoon, and in the evening her pulse was 170 and scarcely countable. She did not lose any quantity of blood to speak of. I made a saline infusion of 12 or 13 ounces into the brachial vein, afterwards the pulse got stronger, and continued so from that time, and there was no further trouble during her recovery.

The next specimen is a portio carcinoma extending about an inch into the cervix on the posterior lip. It is a portio carcinoma because it has the greatest extent down at the vaginal portion, and becomes smaller and smaller as it goes up in the cervix. If we have a cervix carcinoma that opens down in the vaginal portion, we should expect to have a larger cavity in the cervix and a smaller opening in the vaginal portion. This patient was 28 years old, and in spite of her being a nullipara the operation was very easy. I had here, as in all of the cases, to dilate the vagina posteriorly, but otherwise, evidently on account of the small size of the uterus, the operation was easy—so easy that there was no cause for either ante- or retroversion while taking it out; it was just held down, and the ligaments ligated. In this case the operation was so easy that I united the peritoneal as well as the vaginal wound, closed them up together with a row of sutures, commencing in the anterior fornix, going through the anterior peritoneum, the posterior peritoneum, and out of the posterior fornix, thus closing up by one row of sutures the peritoneal and the vaginal wound. In the other case, I closed the peritoneal wound and left the vaginal wound open. The drainage used was iodoform gauze. She made the most undisturbed recovery of all of them; never had a rise of temperature nor of pulse, and never had any pain. The tubes and ovaries were not removed.

The third case is a small portio carcinoma, extending but slightly up in the cervix, and can be seen on the posterior surface of the uterus. She had previously had perimetritis. This uterus was perfectly movable, but the operation was not easy, as the loosening of the bladder from the uterus was difficult, while in the first two cases it was easily detached with the finger. But here, perhaps on account of the previous perimetritis, the tissue between the bladder and uterus was so dense that it had to be cut with the scissors, and I made a small opening into the bladder, which was united at the time it was cut, and did not leave any bad results, not even a temporary fistula, as no urine passed at any time down into the vagina. Her recovery was uninterrupted.

The fourth specimen is another portio carcinoma on the posterior lip, reaching up in the cervix perhaps half an inch. The patient was a multipara, 28 years old, and quite fleshy. Contrary to my expectations, the operation was extremely difficult. The vagina was not unusually narrow, but I think the difficulty of the operation was due partly to the large size of the uterus, and partly on account of the fact that she was very fleshy. I think that in a very fleshy person there is some little part of the vagina narrowed by the subcutaneous tissue on the inside of the nates. There was here the same difficulty as in the previous one about separating the bladder from the uterus, which, however, has not given rise to any passage of urine into the vagina. I operated according to the method of Leopold, loosening the lower part of the broad ligaments first, and then going up until there are no firm bands left on the sides of the uterus. When that is done, and the anterior fornix loosened, as a rule the uterus becomes so movable that it comes down an inch or an inch and a half or two inches into the vulva, so that the rest of the operation is comparatively easy. But in this case it did not come down. There was an unyielding condition of the lateral ligaments. What the reason was I do not know. Of course, this condition made the operation difficult and long, so that at the end of the operation I did not care to lose time in uniting the

peritoneal or the vaginal wound, but only brought down the ligatures to the borders of the vaginal incision, uniting them here and leaving the peritoneal cavity open, using for drainage iodoform gauze packed up in the peritoneal cavity. This patient did not have an uninterrupted recovery. She had a temperature for a couple of days of about 101.5°, later on 100° now it is down below 100°. But what alarmed me more than the temperature was that the pulse was up in the neighborhood of 120 all the time, until now it has finally gone down. In this case I had to change the gauze packing at the beginning of the rise of temperature, taking it out and introducing a drainage-tube so as to be able to wash it out every day; the washing out, however, not being trusted until after the tenth day, because at least one, perhaps more cases are on record where, when the washing out was performed early, the fluid has gone up into the peritoneal cavity and caused general infection.

DR. MERRIMAN: Do you think that if you had sewed up the cavity of the peritoneum you would have saved her much?

DR. FENGER: I must confess that I believe in closing the peritoneal wound as a matter of safety. The specimens here show one point, namely, that a strict line, as Ruge and Veit have pointed out, between portio carcinomata and cervix carcinomata does not exist. They say that a portio carcinoma very rarely extends up into the cervix. If that is the case it would, of course, not be justifiable, in many cases of simple portio carcinoma, to do anything but the partial operation. Fritsch has called attention to a fact which these specimens show very distinctly: that is, the difficulty of finding out if a portio carcinoma is limited to the portio proper or extends up into the cervix, or even into the cavity of the corpus.

I might say a few words in regard to the manner of operating. It is very far from being generally agreed upon which operation is the best, and the variety of procedures is very large. As an illustration, we will take the treatment of the broad ligament and the closing of the vaginal and peritoneal wound. I think there has been an improvement in the technique of operating over the old methods in operating as proposed by Sänger and Fritsch. They begin the operation by the ligaturing step by step of the parametria. When that is done well on both sides, the uterus will become so movable that the remainder of the operation can be done with comparative ease. This ligaturing step by step, together with Martin's method of suturing, does away with one of the dangers of the operation, namely: hæmorrhage. By this step ligaturing the uterine artery is met half or three-quarters of an inch above the fornix, and can be securely ligated, so that the rest of the operation can be done with comparatively little loss of blood. The other danger which we have to encounter is sepsis, as we have to do with a carcinoma, whose surface is always decomposed and septic. Besides doing the usual and necessary clean operating, Leopold proposes that we should not antevert or retrovert the uterus, but take it out without any of these procedures. Fritsch advises to leave the posterior fornix closed when we antevert, so that the carcinomatous surface cannot be turned up into the peritoneal cavity, and come in contact with the organs there.

As to the treatment of the peritoneal and vaginal wound, there is also a great variety of methods. It seems that for after-treatment packing with iodoform gauze is much more convenient and much less troublesome than a drainage-tube, as the iodoform gauze can be left in for a week or more without being removed, and then the after-treatment is over.

DR. NELSON: I would like to ask Dr. Fenger, in regard to the removal of the ovaries and tubes, whether they are likely to produce disagreeable results in the after-history of the patient by being retained? I can understand full well the desirability of leaving as many organs and as much tissue as can be left, but would raise the question of the desirability or not of removal of the ovaries and tubes when the uterus has been removed.

DR. FENGER: In answer to that question, I would say that it is remarkable what little trouble has been reported from the cases where the ovaries and tubes have been left. There are a few cases, one of Schroeder's, where the menstrual molimina from the organs left has caused the patient trouble. In another case, the ovary or a piece of it which had been left was imbedded in the cicatrix, and caused afterwards, according to the opinion of the operator, periodical pains. Brennecke says that he has come to the conclusion that it does not do any harm to leave the ovaries and tubes in. He says that the ovaries atrophy, that some of his patients have had slight molimina in the first three to six to nine months after the operation, and after that time the symptoms from the ovaries have always entirely ceased. That is all I know about this question. But as we get towards the end of the operation it is hard on the patient and hard on the operator, and I feel like doing as little additional operating as possible, and if I can leave the ovaries and tubes without doing the patient any harm I prefer to do so, as the operation is in many cases a severe one on account of the liabitity of the patient to collapse towards the end of the operation, which lasts for an hour and a half to two hours. So until I can do the operation much quicker I should prefer to leave the ovaries and tubes in.

DR. MERRIMAN: Is there any danger of including the ureter in this operation, of injuring it in any way?

DR. FENGER: Yes; there is danger, inasmuch as it has been done, although very rarely. When the ligaturing of the broad ligaments has been done step by step so that the uterus can be drawn down, then the ureter stays up, so that the final ligature of the broad ligaments is not likely to include the ureter.

DR. MERRIMAN: But in this method that has been spoken of as Martin's, would there not be more danger when the bladder is not loosened?

DR. FENGER: Martin ligates step by step, the parametria first; consequently he gets the uterus further down.

DR. MERRIMAN: He draws the bladder down with it, the uterus and bladder not being disconnected, and I should think there would be great dan-

ger of including the ureter in some of the operations.

DR. FENGER: Even if the ureter is caught with the bladder when the uterus is made movable and drawn down, the ureters stay up.

DR. NELSON: Is it customary with the majority of operators to curette and thoroughly disinfect the carcinomatous ulcer before beginning the operation, immediately before, or is it done several days before, or is it done at all?

DR. FENGER: I think it is done several days before by some, for instance by Hegar and some others. Fritsch and Leopold do it at the beginning of the operation. After the curetting, the surface is disinfected by a strong solution of chloride of zinc or a strong carbolic acid solution. I prefer to postpone it to the beginning of the operation so as not to have the patient disturbed with an additional operation, with some loss of blood.

DR. MERRIMAN: Supposing there was a case of cancer that had gone beyond the cervix into the tissue posterior to the uterus, invading the vagina and extending along down on the arterial side, but there was nothing anterior to the uterus, would it be safe in a case of that kind to undertake the operation of extirpation?

DR. FENGER: I think I should refuse. I think the benefit to the patient lies in operating early, and as soon as a portio carcinoma has gone over on to the wall of the vagina to any extent, I think the prospects of a radical cure are very small, and that the patient is just as well off with symptomatic treatment, curetting, etc. I think the aim of the operation should be a radical cure, and that extensive operating is being done away with more and more, and only limited cases regarded fit for operation.

Has the vaginal hysterectomy become less dangerous since its revival by Czerny in 1879? The mortality from the operation for the first five years up to 1884 has been given by Mundé to be 28 per cent. In a paper read before the Amer. Gynecological Association in 1884, he tabulated all the cases to be found in the literature from Europe as well as the United States; the operations amounted to 255 with 72 deaths = 28 per cent. For the operations of the year of 1885, recorded in Virchow-Hirsch's *Jahresbericht*, 1886, the mortality is already considerably lower. I find reports from 32 operators. In all 106 cases with 17 deaths, or 16 per cent. A. Martin reports, in his work of 1887, 66 cases with 11 deaths =16.6 per cent. Special reports from individual operators in the last year show even more favorable results.

Thus we find reported by Klotz, 17 cases, no deaths; Gaillard Thomas, 15 cases, no deaths.

Most valuable, however, are, on account of the larger number of cases, the recent reports from Fritsch and Leopold: Fritsch reports 60 cases with 7 deaths, 10.1 per cent; Leopold reports 48 cases with 3 deaths, 6.2 per cent. mortality.

The reports of both last named operators include all of their operations from 1883 to 1887. Leopold's mortality of 6 per cent. is the lowest yet recorded for a larger number of cases. Every operator has, undoubtedly, in the beginning of his work in this line, operated on cases that were too far advanced for a reasonable hope of permanent eradication of the disease. The more recent the origin of the tumor, and consequently the more limited the extent of the growth, the better are the prospects, as well the immediate as the remote, for the patient. If then, in future, the cases for operation are properly selected, we can expect that the mortality will reach a reasonably low figure, and I think we must agree with Fritsch in the following statements (p. 385, l. c.): "I have no doubt that in a near future the mortality in general will come down to 3 or 4 per cent."

It certainly seems remarkable, and far surpassing the expectations with which this operation, less than ten years ago, was reintroduced in surgery, that in so short a time its mortality should come down to almost the same point as in laparotomy for ovarian tumors. Ovariotomy needed a much longer series of years to reach the point of safety it possesses now. Vaginal hysterectomy for carcinoma can be said now to be not more dangerous than the extirpation of a carcinomatous mamma with removal of the axillary glands, for which operation Billroth[1] gives a mortality of 10.5 per cent. Schmid, from Kuster's Hospital (Auguste Hospital, Berlin), 5.2 per cent.

Are the partial operations on the carcinomatous uterus, provided they permit of effective removal of the tumor, preferable as being much less dangerous than the total extirpation?

Pawlick[2] reports a large series of partial galvanocaustic operations from Brown's Klinik in Vienna.

137 cases had 10 deaths = 7.2 per cent., from immediate effects of the operations.

In 12 of the cases of recovery, late hæmorrhages of a severe character were observed.

Schröder[3] reports 105 vaginal amputations of vaginal portion and cervix with 13 deaths from sepsis = 12.3 per cent. Wallace[4] reports 10 cases with 2 deaths = 20 per cent. Gusserow[5] has 33 cases with 3 deaths = 9 per cent.

We can thus conclude that, if the mortality of total hysterectomy is in the neighborhood of 10 per cent., the operation is not much more dangerous than the partial vaginal operations.[6] A much larger field than hitherto will undoubtedly be accorded to the operation. It is, in many cases, almost impossible to determine how far up into the walls of the uterus the carcinoma tissue extends. Even with a mortality of 25 per cent. for the total extirpation, Gusserow, in doubtful cases, will prefer this operation to the partial operations, and he states in this connection as follows: "The safer total extirpation becomes, the more it will take the place of the vaginal amputation of the cervix."

A much cited case of Binswanger is of importance in our choice of operation. He found a perfectly isolated portio carcinoma, accompanied by an also isolated carcinomatous degeneration of the mucous

[1] Bilroth, Krankheiten der Brustdrüsen, p. 155. Deutsche Chirurgie, 41.
[2] Wiener Klinik, 1883, xii., 4.
[3] Krankheiten der weiblichen Sexualorgane, 1884.
[4] Brit. Med. Journal, September 15, 1883.
[5] Die Neubildungen des Uterus, 1885, p. 233.
[6] Schatz, 1883. The danger of the high vaginal amputatioh does not seem to be much smaller than that of the total extirpation.

membrane of the fundus. It is generally accepted as a law in the surgery of the mammary gland, that how localized a small carcinomatous nodule may be, nothing less than the removal of the entire gland, and I regard it safe to add the lymphatics of the axilla, would be the safe operative procedure to adopt. It can thus be understood that authors who believe in a low mortality for the vaginal hysterectomy—Sänger, Leopold, Fritsch—require this operation to be done in all cases of limited carcinomas, even small carcinomas of the vaginal portion, to the exclusion of any of the partial operations.

Fritsch calls attention to the fact that a strict demarcation line between carcinoma of the cervix and of the vaginal portion, as Ruge and Veit in their classical article on uterine carcinomas have described it, does not exist in all cases. Some apparent portio carcinomas extend deeply up into the cervix. It is often not possible during a partial operation, viz., vaginal amputation of the cervix, to determine if we amputate in healthy tissue.

Consequently, for the majority of such cases the total extirpation is safer as to radical cure of the carcinoma than a partial operation.

Dr. H. T. Byford: I had the good fortune to successfully operate upon one case in which the uterus looked something like this larger one Professor Fenger has shown us. It was probably an inch longer. The patient was a fleshy married lady, about 30 years old. The cervix had been amputated a few months before. I ligated the broad ligaments step by step, as recommended by Leopold. I left the abdominal cavity open except to draw the ligatured parts together, and then packed the vagina with iodoform gauze for eight days. By mistake one of the iodoform tampons was left in nearly two weeks, but it did not cause any serious symptoms. As to leaving the peritoneal cavity open, I think there never will be a cast-iron rule, for that will probably have to be decided by the case. If the case was one in which there was much manipulation of the broad ligaments we would expect some serosanguinous exudation, and should not completely close the peritoneal cavity. When we use iodoform gauze in the proper shape we practically close it up. I do not see the use of sutures. Before there can be any decomposition of secretions, the peritoneal cavity is closed by exudation. Stitches, are only a source of irritation, both during and after the placement. As to leaving the ovaries, it seems to me that in taking out the uterus we take out the larger portion of the sexual nervous system and produce atrophy of the sexual organs quicker by removing the uterus than by removing the ovaries. It would be almost as superfluous to remove the ovaries after taking out the uterus as to remove the uterus after taking out the ovaries to bring on the menopause. There is one kind of operation which has not been referred to, that is by leaving compression forceps on the stumps, as is done quite extensively in France and England. When the patient is very weak it seems to me an improvement to put on these clamps and thus rapidly finish the operation. In regard to the mortality and difficulty of the operation, I think that taking out the uterus is not so very much more serious, although much more difficult, than amputating the cervix. It cannot be so safely done so often by the inexperienced operator, for he is more liable to do something that will endanger the life of his patient. But when the operation is properly performed, the peritoneal cavity practically closed by the parts being brought together, the patient is left in as good condition for recovery as by a high amputation combined with the cautery.

Dr. J. C. Hoag: I have observed with a good deal of interest an apparent revulsion in feeling and opinion with regard to the advisability of this operation. Only a few months ago, in conversation with a number of operators in England I found the operation was very generally decried, but since that time, from a perusal of the English journals, one gets a different idea of the opinion of the British operators. Some of them did not hesitate to say that in those cases which recovered there was no carcinoma. In regard to the technique of the operation, I can only speak in the light of what experience I have had in practice on the cadaver, under the instruction of a prominent operator. I was instructed to begin the operation by opening the anterior and posterior culde-sac. This certainly seems to be an inferior method to the one one described by Dr. Fenger, as affording opportunity for infection of the peritoneum. It has one advantage, however, and that is, it enables one to get his bearings better in regard to the relation of the parts, because one can surround the broad ligaments with the finger and find just where to pass the ligatures, and in this way I think the ligatures can be put in in a more accurate manner. The loss of blood is less, and after the removal of the uterus there is no trouble whatever from hæmorrhage because it is *entirely* prevented by the acucrately applied ligatures, whereas in the other methods there is often a considerable loss of blood. In a number of cases which I saw the operation was practically bloodless.

(*To be concluded.*)

PATHOLOGICAL SOCIETY OF PHILADELPHIA.

Semi-Annual Conversational Meeting.

The President, F. P. Henry, M.D., in the Chair.

Dr. W. T. Councilman, of Baltimore, delivered an address on

SOME FURTHER INVESTIGATIONS ON THE MALARIAL GERM OF LAVARAN.

This organism, first described by Lavaran, has been met with in every case of malarial fever which the writer has met with. The organism is in high degree polymorphous, and ten tolerably distinct forms may be found in the blood. Some of these evidently represent different stages of development, and the connection between them is obvious. Others present such marked differences in form that no connection between them can be made out. Some of the forms are only found outside of the red corpuscles, and others are found free in the blood. They are: 1. Non-pigmented small amœba-like bodies in-

side the red corpuscles; 2. pigmented bodies larger than No. 1, also in red corpuscles; 3. pigmented bodies about the size of red corpuscles; 4. segmenting forms of the No. 3 body; 5. small hyaline bodies, which are formed by this segmentation; 6. a crescent-shaped body with pigment in the centre, the horns of the crescent being often connected by a fine line; 7. round or oval bodies which differ from No. 6 in shape only; 8. a pigmented body provided with numerous long, actively moving flagellæ; 9. actively moving free flagellæ, which are evidently derived from No. 8; 10. a pigmented body with an active undulatory movement of its periphery. The first five forms are found only in intermittent fever, No. 4 only being seen in the blood during the chill period, and its presence is invariably connected with the chill; Nos. 6 and 7 are found in cases of malarial cachexia.

The most interesting forms, and about whose parasitic nature there can be no doubt, are the bodies Nos. 8 and 9. These are generally absent in blood taken from the finger, but they may be found in any type of the disease. They are the only forms of the organism whose presence in the blood is not associated with a special type of the disease. They were found, however, in fifteen out of the twenty cases in which the blood of the spleen was examined. Of these twenty cases twelve were cases of malarial cachexia, and eight of intermittent fever. In the twelve they were found ten times and in the eight cases of intermittent five times. From this it seems probable that Lavaran was right in considering the flagellate organism the most important form of the parasite. The influence of quinine on the intracorpuscular forms of the parasite is most marked. Doses of 15 grs. t. i. d. for two days in succession were found sufficient to cause them to disappear. The effects of the quinine were not so apparent in the other forms. The crescents were apparently not diminished in number in one individual after he had taken 45 grs. of quinine daily for seven days, and 60 grs. daily for four days.

DR. WM. OSLER said the thought which had struck him most forcibly, in looking over this subject, was the almost perfect unanimity which has prevailed among the different observers as to the appearance of these organisms. With the sole exception of the segmented form (No. 4), Lavaran and the early observers had described them all. His own observations, since the communication he had presented to the Society last year, had been somewhat limited. He had, however, made a series of observations upon the blood of fishes and birds, since it had been stated that bodies resembling Nos. 1, 2 and 3 had been found in the blood of carp and some water-fowl. Prof. Baird had offered him facilities for this work at Wood's Hall, and had kindly furnished him with forty-five carp. He had failed to detect any such organisms in the blood of these. In the blood of a goose sent him from Ontario he had found one or two pigmented bodies. It had been been stated by Dr. McCallum, who sent him the goose, that the bird had malaria. However, the bodies were not numerous, nor was the temperature of the goose elevated, nor, so far as he could make out, had it chills. Dr. Councilman had not figured one body that is very peculiar indeed, namely, a solid body in the centre of a clear space. It stains like a microörganism, varies in size, and although the body itself does not change in form, yet there are sometimes changes in outline in the clear space surrounding it. They were somewhat abundant in one case only.

One other point with regard to the clear bodies (No. 1): In five or six instances he had seen such bodies pass out from the corpuscle, remaining out and undergoing no further change of form. He was not altogether prepared to say what was the relationship of these bodies to the other bodies described. It has been claimed that similar changes can be obtained by special methods of treating the blood. The most important question is first to determine the relationship of the hyaline to the pigmented bodies, and the possibility that the hyaline may not be directly associated with them. He was convinced that the pigmented and segmented bodies were merely different stages. He could fully confirm what Dr. Councilman said with regard to the crescents. They are most peculiar and interesting bodies, occurring in the chronic cases and in those in which there had been no chills. Three weeks ago he had diagnosticated a case as one of mild typhoid fever; it had lasted eight or ten days, with constant fever, up in the evening, down in the morning; slight enlargement of the spleen, no spots. His Resident examined the blood and found what he thought were crescents. The case got rapidly better, left the hospital, and returned in a few days with a distinct chill, with crescents in the blood and a well-marked remittent fever. The mobile forms he had not seen nearly as frequently as Dr. Councilman; though he had not examined the blood from the spleen they had been present in eight or ten cases. Nor had he seen free filaments nearly so often; when he wrote his paper he had not seen them at all. Since then he had watched the process of separation. It was out of the question to suppose that the crescents or mobile forms could come from degeneration in the stroma of the corpuscle, but that the hyaline forms resulted from such changes was not altogether improbable; and further investigations were necessary to determine this point.

DR. J. P. C. GRIFFITHS called attention to the diagnostic value of these organisms, and instanced a case where from the indefinite history and symptoms he was unable to make a diagnosis until after an examination of the blood, when a short course of treatment resulted in a cure.

DR. H. C. WOOD said that no one seemed to have made any connection between the crescents and the amœboid forms; they seem to differ in that these are destroyed by quinine, those are not affected. We know that malarial cachexia is cured by quinine, arsenic and iron. If these remedies have no effect on the crescents, what connection have these bodies with malaria? and what becomes of them, do they eventually disappear?

DR. FORMAD asked if these organisms are the same as described by Hütter some twenty years ago?

DR. COUNCILMAN said, in conclusion, that Hütter described moving bodies attacking the red corpuscles, existing in all fevers and apparently almost everywhere else. These observations had never been confirmed. The point raised by Dr. Wood had always puzzled him, and for a long time he had tried to reconcile himself to a belief in two distinct diseases, but this he could not do, as always as the other forms disappear the crescents appear. He had never seen the crescents unless with a history of previous chills. He was not altogether prepared to say that quinine had no effect on the crescents, though in several cases he had given it in large doses with no results. Still in some cases they do seem to disappear. He thought with Dr. Osler that the crescents could not be possibly produced by changes in the stroma of the corpuscles, though some of the other forms might.

FOREIGN CORRESPONDENCE

LETTER FROM LONDON.

[FROM OUR OWN CORRESPONDENT.]

Hydrofluoric Acid in Phthisis—Cause and Prevention of London Fogs—Cow-pox in England—Prevention of Pollution of Rivers by Soap and Other Works—Multiple Sarcoma with Osteitis Deformans.

Hydrofluoric acid is spoken hopefully of as a new treatment for the cure of phthisis. The patient passes one hour out of the twenty-four in a room of the capacity of six cubic metres, into which a current of air is pumped which first passes through a fluid composed of 100 grams of hydrochloric acid and 300 grams of distilled water. The proportion of hydrofluoric acid taken up in the cold under such circumstances would vary greatly with the bulk pressure and velocity of the air current, but would in no case be large, owing to the great attraction of this acid for water. It is, however, stated that this treatment alters the cough immediately, quickly diminishing it, and occasioning its complete cessation in a few days, the bacilla of the sputa concurrently disappearing. Fifteen or twenty days suffice to greatly benefit the patient, if not to cure him entirely. Out of nearly a hundred cases in various stages of the disease treated during some ten weeks this autumn, it is alleged that thirty-five were cured, forty-one greatly improved, fourteen seemed unaffected either way, and ten deaths took place. The action of the acid is considered a purely antiseptic one, and several well-known physicians are about to make systematic trials of the method.

Sir Douglas Galton recently read a paper at the Parke's Museum Hygiene upon the cause and prevention of those dense fogs which appear yearly to become more frequent and severe in London. The lecturer said that black fog was entirely the result of smoke, one rose to see a lovely sky, but an hour later, when fires were lighted the brightness was dimmed and the sky and light disappeared. Dr. Russell's experiments showed that the air in a fog contained four times as much carbonic acid as ordinary London air, and that might be taken as an index of the quantity of other impurities which a fog accumulated. Fog was caused by the floating matter in the air attracting to itself the aqueous vapor which was always more or less present. Some forms of matter, such as ammonia and sulphur, had a greater affinity for vapor than other matters. These substances were present in London air to a great and unnecessary extent. The blackness of the fog came from the smoke arising from incompletely burned coal. If smoke was to be avoided houses must be warmed by hot air, hot water, steam or gas, as in the so called smoke-preventing open fires care was required in putting on coals and nobody exercised that care.

A report of the Agricultural Department of the Privy Council is a curious example of the unexpected result to which scientific inquiries sometimes lead. The result of an inquiry by Dr. Klein, F.R.S., made for the Local Government Board and published last February, appeared to establish the fact that milch cows could suffer from scarlet fever, as Dr. Klein and Mr. W. H. Power in the inquiry as to the cause of an outbreak of scarlet fever in Marylebone, traced the milk supplied from a certain dairy farm and ascertained that the cows were suffering from a contagious eruptive disease. The same microbe was found in the discharges from this cow disease as was found in the blood of persons suffering from scarlet fever, consequently the conclusion was arrived at that the human being caught the scarlet fever by drinking the milk of cows thus diseased. This theory was adopted by the Local Government Board. The Agricultural Department took the matter up and instructed Professor Crookshank of the Bacteriological Laboratory of King's College, to make an independent inquiry. Professor Crookshank has arrived at the conclusion that this cow disease has nothing to do with scarlet fever, and that the milk which gave the disease must have been contaminated in some other way, probably through the hands of milkers. But this new inquiry has done something more than prove the previous investigation to be wrong, it has most unexpectedly turned up a new fact of great practical importance. It is not necessary to follow the Professor through all the somewhat intricate steps of his argument, suffice it to say that he has apparently proved beyond the range of reasonable doubt that this eruptive disease of the udder of the cow is true Jennerian cow-pox. It is a curious fact that for the last thirty or forty years this disease has not been heard of in England, although at the time when Dr. Edward Jenner published his great discovery, just ninety years ago, it was commonly seen in the dairy farms of the West of England. During the same period there have been but two or three cases observed on the Continents of Europe and America. When it was determined to establish vaccination from the calf at the National Vaccine Establishment, the first supply of lymph to vaccinate the first calf had to be obtained from the Hague and Bordeaux, but since then the civilized world had to depend for its vaccine upon stocks derived from one of these sources, or from the human

being. It is, therefore, extremely interesting to find that cow-pox, or vaccinia, has again occurred spontaneously in this country. The dairy farmers and the Agricultural Department are not only triumphant but have returned good for evil. Accused of disseminating scarlet fever, they present the world with a new source of vaccine lymph supply.

At Rochdale an invention to prevent the refuse of soap and other works polluting rivers has been successfully tried. The water containing the dissolved soap is run into a large vault, over this vault are two elevated tanks of the same size and beneath them a retort is fixed. The soapy water is pumped from the vault into the elevated tank and chlorine, generated in the retort from hydrochloric acid and maganese, is forced into the liquid. This causes the refuse and fatty matter to gather in a cake at the bottom. The water in the tanks is run off into the river containing no foreign matter with the exception of a little common salt. The cake of fatty matter and dirt is then treated, the oil extracted by pressure and filtration is made into brown soap exactly like that which is used in the process of washing raw silk. The inventor has been offered £20 per ton by wholesale dealers for the reclaimed soap.

Dr. G. F. Elliott, at the recent meeting of the Medical Society, contributed the notes of a case of multiple sarcoma, associated with osteitis deformans, in a man, æt. 27. There was no history of syphilis, and until February, 1886, the general health had been good. Pain, attributed to rheumatism, then appeared in the knees and shoulders. In December, 1886, the hands and feet were noticed to be enlarged. In June his upper extremities from the fingers half way up the humerus and his legs from the toes to and including the knees were found to be œdematous. There was marked thickening of the bones. The clavicle and some ribs on the right side were also thickened. The skin of the face and hands presented numerous small flattened nodules about ⅛ in. in diameter, there was more or less hyperæthesia of the skin of the trunk. There was pleural effusion over the left lung. Later on troublesome diarrhœa supervened. Nine days before death the patient insisted on going home and was thus lost sight of. The diagnosis was premised from cancerous growth on the thoracic duct and Dr. Hilton Fagge's authority was quoted in favor of the nodules being indicative of a sarcomatous growth. G O. M.

DOMESTIC CORRESPONDENCE

LETTER FROM NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

A Symposium on Hernia—Treatment of Strangulated Hernia; Management before Operation; Principles of the Operation—Conservative Treatment of Irreducible Hernia—Strangulated Hernia in Children—Telegraphic Mind-Cure.

At the December meeting of the Academy there was a "symposium" on the subject of hernia. It was led off by Dr. T. Herring Burchard, who gave a clear exposition of the modern treatment in strangulated hernia, and strongly urged the advantages of early operative interference. He said that, encouraged by the remarkable success obtained in the treatment of strangulated hernia by the methods suggested by Mitchell Banks, Czerny and others, surgeons had latterly paid special attention to the radical cure operation as applied to cases in which strangulation existed, and the results achieved had been most gratifying. The modern operation found its greatest advantage in the radical cure it secured by the complete closure of the sac and the permanent obliteration of the canal; and it had been successfully performed upon all forms of hernia, inguinal, femoral and umbilical, with equally satisfactory results. In the light of these facts he thought that no operation for strangulated hernia could be said to be properly performed without the final closure of the inguinal canal.

With regard to the management previous to operating Dr. Burchard said that his experience had led him to the adoption of a plan of treatment substantially as follows:

1. Pain is allayed, vomiting quieted, and nervous tranquility secured by the hypodermic administration of morphia and atropia.

2. As soon as practicable a careful examination is made of the hernial tumor; any attempt at reduction being studiously avoided.

3. If evidences of inflammation are found, or if there is much swelling in the tumor, a poultice of flaxseed meal and cracked ice, or the ice-coil, is at once applied; these being dispensed with, however, if the patient is feeble or the strangulation is of long standing.

4. A stimulating enema of turpentine and oil, or a large emollient one of flaxseed tea, is administered, and the rectum thoroughly washed out. If the tumor is at all distended no attempt at taxis is made until,

5. The patient is anæsthetized; permission having first been obtained to proceed with the operation in case taxis should fail.

He especially emphasized the advantages to be gained by putting the patient under full anæsthesia (preferably by chloroform), covering the tumor with a rather large and heavy ice poultice, elevating the lower extremities, and keeping the hands entirely off for a period of from thirty to forty minutes. In a number of instances, he said, he had had the satisfaction of seeing the tumor slip back of itself, almost imperceptibly, even after prolonged taxis had been unsuccessfully employed. As to just how long the attempt at reduction was justifiable, no absolute rule could be laid down. In some cases it was advisable that the trial should be kept up for twenty, or even thirty minutes, provided always that only the most gentle manipulations should be employed.

Taxis having proved unsuccessful, the operation should at once be undertaken, and the general principles upon which, as a legitimate surgical procedure, it was based, were the following:

1. A more general recognition by the profession of the value of time in the earlier stages of strangulation; so that surgical relief could now generally be

rendered before pathological changes which were irremediable had taken place in the tissues.

2. Modern herniotomy implies an abandonment of those uncertain and pernicious methods and practices which, founded in a false pathology, sought to relieve the strangulation by producing a condition of systemic relaxation. It is now recognized that spasm, as a causative agent in the production of strangulation, never exists.

3. Modern herniotomy restricts the employment of taxis to within limits which are rational and safe. Necessary as properly directed taxis is in the reduction, by its indiscriminate and reckless use irreparable damage has not infrequently been done the intestine.

4. Modern herniotomy implies the early resort to a cutting operation. Many lives, Dr. Burchard said, had to be sacrificed before the profession seemed to realize that the gangrene and ulceration, the fæcal extravasation and stercoraceous vomiting, the peritonitis and collapse, were not necessary and integral factors of the primary condition of strangulation, but secondary complications, developing later on in the progress of the disease, and the legitimate result of delay in affording relief to the original constriction.

5. Modern herniotomy is an antiseptic operation; demanding the fullest application of Listerian principles.

6. Modern herniotomy requires in the disposition of the hernial sac the finest impartiality of judgment. Certain cases require incision, while in others the strangulation can be readily reduced without opening the sac; so that it would be folly to thus complicate the operation and expose the patient to unnecessary danger.

7. Since Mitchell Banks, of Liverpool, has urged the possibility and expediency of perfecting the old operation of kelotomy, so as to add to the operation done for the relief of strangulation the inestimable advantages of an operation for radical cure, the strongest possible encouragement has been given for the attainment of an early, thorough, and perfect operation.

Dr. V. P. Gibney said that he should like to make some protest against the strong condemnation of taxis which Dr. Burchard had expressed, as he had seen a number of aggravated cases of strangulated hernia reduced under taxis as employed by the average practitioner.

Dr. Robert F. Weir remarked that while the radical operation unquestionably marked an improvement in this field of surgery, it could not as yet be regarded as a perfected operation; and having given some statistics showing the comparative frequency of relapses, he said that surgeons were everywhere practicing the operation, and he feared too freely—that is, too freely in non-strangulated hernia.

Dr. W. B. De Garmo read a paper on the conservative treatment of irreducible hernia, which did not treat of strangulated hernia, but advised a course of gentle manipulations in cases which were generally regarded as irreducible. The first thing to do, he said, was to get the mass freely movable in the sac, and then use compression, rather than ordinary taxis. In the second place, the tumor was to be separated from the vicinity of the testicle, if it was situated in the rectum. In other words, it was to be perseveringly stripped from its lower adhesions, and gradually worked upwards, no force whatever being used. The complete separation of the omentum so frequently forming a part of the mass was accomplished before the reduction proper was commenced. By taxis he explained that he meant the gentle manipulation of the neck of the sac, but employed in such a way as to avoid pressure back against the abdominal rings, which was apt to be resorted to in taxis as commonly practiced. The manipulations were to be kept up for from fifteen to forty-five minutes at a time and repeated once a day. In some cases he was in the habit of directing self-applied taxis. After the reduction the hernial sac usually remained; but if the hernia was kept properly in place by a well-fitting truss, the sac often disappeared in the course of time. Out of ten cases reported by Dr. De Garmo, there were seven reductions and two failures; while one case was abandoned on account of the patient's having diabetes.

An interesting part of the discussion was that in reference to strangulated hernia in children. Dr. A. G. Gerster read a paper on this subject in which he reported four cases operated upon, and said that there was one point of difference in the treatment required as compared with that in adults; this being due to the difficulty of preventing infection of the external wound in small children. Primary union did not occur after suturing, and he therefore advocated an open treatment of the wound. It was his practice to pack it with iodoform gauze in order to secure an aseptic condition.

Dr. Weir said that he had had two cases in children, like those of Dr. Gerster, in which he operated; and both had proved fatal. In two other cases he had successfully reduced the hernia without operation, by resorting to the expedient of inserting the finger into the rectum, and thus combining internal with external pressure.

Dr. Gibney, who has had an unusually large experience in the matter at the Hospital for Ruptured and Crippled, said that he did not recall a single instance of strangulated hernia occurring in childhood in which it was not possible to reduce the strangulation with the aid of chloroform. Furthermore, he believed that if the hernia could be reduced in children, it could be cured simply by the wearing of a suitable truss. As, in addition, the operation was a more serious one than in adults, he thought, therefore, that operative interference should never be resorted to in children; and such interference became all the more unnecessary in the light of the successful results accomplished by the conservative methods advocated by Dr. De Garmo.

In concluding the discussion Dr. De Garmo said that he had met with only temporary incarceration in children. No serious results had ever occurred in his experience, and he had never found it necessary even to resort to taxis in such cases.

Dark days are in store for the medical profession, and students of medicine might as well at once begin to devote their energies to some other calling, if the

wonderful reports lately published in the newspapers are to be accepted with entire confidence. When anybody becomes ill now it is only necessary for the friends of the patient to telegraph to "Dr." Dresser, "the great mind-healer" of Boston, and prompt recovery will immediately result. At all events, this is what the newspapers tell us occurred the other day, in the case of a little girl 11 years old, in Brooklyn, who was "seriously ill with remittent fever." "Three eminent physicians" assured the parents that there was nothing to be done for the child except to see that she had good nursing. In spite of this advice, however, she continued to grow worse, until she was "actually at the point of death." In this emergency a telegraphic message was sent to "Dr." Dresser, in Boston. For an hour she remained unconscious, during which time, we are informed, the great mind-healer was "working on her;" and "in half an hour she was as well as ever." P. B. P.

A CORRECTION.

Sir:—I observe in an article on "Conservative Gynecology," Dr. Horatio R. Bigelow says that he cannot agree with the view tendered by one surgeon: "When in doubt, open the abdomen and find out." He thinks a more accurate diagnosis should be made in every case before advising abdominal section. This is not the first occasion by many times on which I have had to correct this deliberate misquotation by Dr. Horatio R. Bigelow. He does not indicate me this time by name as he has in other instances, but the quotation which he says he takes he specifies in other instances to be from me.

I have never said, and I do not believe any other living surgeon has ever said, "when in doubt, open the abdomen and find out." What I have said is: "The abdomen should be opened in cases of doubt only when there is risk to the life of the patient, or when the patient is in a serious condition;" a very different thing indeed from Dr. Bigelow's words. I am, etc., LAWSON TAIT.

7, The Crescent, Birmingham, December 15, 1887.

NECROLOGY.

CHARLES G. POMEROY, M.D.

Dr. Charles G. Pomeroy died in Newark, Wayne Co., New York, on December 14, 1887, in the 71st year of his age. Dr. Pomeroy was one of the best-known physicians and surgeons in Central New York. He was a member of the American Medical Association, permanent member of the New York State Medical Society, a member and one of the founders of the New York State Medical Association, ex-president of the Medical Association of Central New York, and often was elected President of the Wayne County Medical Society. During the war he received a surgeon's commission, but was never in the field. At his death he was one of the trustees of the New York State Custodial Asylum for Feeble-Minded Women, and until his health failed was the institution's treasurer and physician. He was public spirited, and of the strictest integrity both in and out of his profession. D. C.

MISCELLANEOUS.

THE ALUMNI ASSOCIATION OF THE WOMAN'S HOSPITAL in the State of New York, will hold its third annual meeting at the New York Academy of Medicine, January, 18, 1888, commencing at 10 A.M.

OMISSIONS.—By mistake the following names were omitted from the List of Permanent Members of the American Medical Association, published in THE JOURNAL for December 31, 1887: T. Wertz, M.D., Jasper, Indiana; Talbot Jones, M.D., St. Paul, Minnesota.

QUADRENNIAL DISCOVERY PRIZE OF £1000.—1887–1890.—In accordance with the terms of the Grocers' Company's Scheme, the Court announce that the problem proposed as the matter of competition for the first Discovery Prize, (1883–1886) viz.:

"To discover a method by which the Vaccine Contagium may be cultivated apart from the animal body, in some medium or media not otherwise zymotic:—the method to be such that the Contagium may by means of it be multiplied to an indefinite extent in successive generations, and that the product after any number of such generations shall (so far as can within the time be tested) prove itself of identical potency with standard vaccine lymph," has not been solved by any of the candidates. The Prize has, therefore, been withheld, and the same problem is, subject to the conditions of the Scheme, again proposed for investigation. The Prize is open to universal competition, British and foreign. Competitors for the Prize must submit their respective treatises on or before December 31, 1890, and the award will be made as soon afterwards as the circumstances of the competition shall permit, not later than the month of May, 1891. In relation to the Discovery Prize, as in relation to other parts of the Company's Scheme in aid of sanitary science, the court acts with the advice of scientific assessors. All communications on the subject are to be addressed to the Clerk of the Grocers' Company, Grocers' Hall, London, E.C.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT U. S ARMY, FROM DECEMBER 31, 1887, TO JANUARY 6, 1888.

Major P. J. Cleary, Surgeon, granted leave of absence for one month. S. O. 138, Dept. Ariz., December 25, 1887.

Capt. R. G. Ebert, Asst. Surgeon, ordered from Ft. Custer, Mont., to Ft. Pembina, D. D. S. O. 301, A. G. O., December 30, 1887.

First Lieut. C. B. Ewing, Asst. Surgeon, granted one month's leave. S. O. 137, Dept. Missouri, December 27, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE WEEK ENDING JANUARY 7, 1888.

Surgeon S. D. Murray, on being relieved at Ship Island, Miss., to proceed to Key West, Fla., and assume charge of the Service. January 4, 1888.

P. A. Surgeon S. C. Devan, relieved from duty at Port Townsend, W. T.; to assume charge of Sapelo Quarantine. January 5, 1888.

P. A. Surgeon A. H. Glennan, relieved from duty at Key West, Fla.; to assume charge of the Service at Port Townsend, W. T. January 5, 1888.

Asst. Surgeon P. M. Carrington, promoted and appointed P. A. Surgeon from January 20, 1888. January 7, 1888.